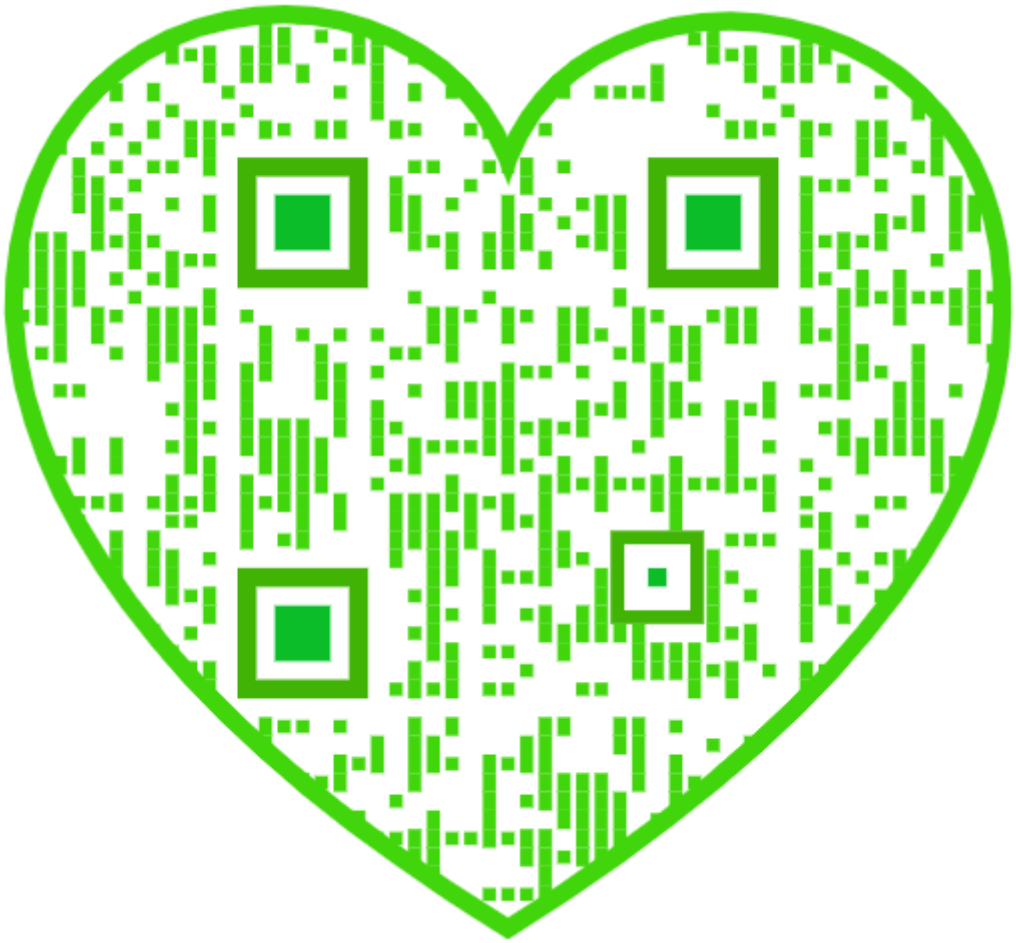

Rhythmic beauty of line in the costume illustrated in this old Japanese print by Toyokuni. (See page 61.)

LIPPINCOTT'S HOME MANUALS
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CLOTHING FOR WOMEN

SELECTION, DESIGN, CONSTRUCTION

A PRACTICAL MANUAL FOR SCHOOL AND HOME

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7 COLORED PLATES, 262 ILLUSTRATIONS IN TEXT

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PUBLISHED SEPTEMBER, 1916
REPRINTED NOVEMBER 23, 1916
REPRINTED MARCH 20, 1917

Electrotyped and printed by J. B. Lippincott Company,
The Washington Square Press, Philadelphia, U. S. A.

PREFACE

THIS book presents practical working directions for the design and construction of women's clothing, including various kinds of outer- and undergarments. It includes problems embracing the fundamental principles involved in the selection and design of clothing; the theory and use of color; pattern-making and clothing construction.

As the mission of the text is chiefly the exposition of constructive processes, the selection of apparel and choice of material has been treated in a manner as best fitted into the scheme of the book. A more scientific treatment of textiles may be found in the numerous texts listed in the bibliography.

The construction of garments has been approached from the standpoint of those who have had instruction in elementary sewing. For those who have not had such instruction, a review of the fundamental stitches, and some simple processes, have been included in the section on undergarments.

When used in schools and colleges, it is not intended that the subject matter be taken bodily from the text for classroom use, but rather that a selection of problems be assigned by the teacher, that will best fit the needs of students, and the time allotted to the subject in the curriculum; and that the text in the hands of students be supplemented by the teacher's instruction. It is important that teachers read the section written for them, which is intended to aid in an intelligent use of the text (pp. 426–437).

In the home, the text will, it is believed, serve as a reliable handbook to the woman who makes her own clothing or supervises its construction; while the woman who purchases ready to wear garments will receive help in her selection by the standards suggested here. Special suggestions for the home women are given (pp. 437–439).

The author wishes to express her appreciation of the interest others have shown in the preparation of the text: to Professor Jane Fales, Head of Department of Textiles and Clothing, Teachers College, for permission to employ some of the drafts in use at Teachers College, certain modifications of which have been made to suit the needs of this text; to Miss Alice F. Carleton, student of Teachers College, for assistance in the preparation of other drafts;

to Miss Florence Newcomb, Washington Irving High School, New York, for the chapter on Color, and criticism of the chapter on Design; to Miss Margaret O. McGowin, Washington Irving High School, for the chapter on Embroidery, and assistance in preparation of illustrations; to Miss Ruth Penfield Sill, Director Domestic Art, Central Technical School, Toronto, Canada, for criticism of the section on Undergarments; to students of Teachers College, pupils of Washington Irving High School, and others who kindly loaned garments, made sketches, or assisted in the preparation of illustrations.

LAURA I. BALDT

Teachers College, Columbia University, New York City, April, 1916

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PART I
SELECTION OF CLOTHING

CLOTHING FOR WOMEN

CHAPTER I

CLOTHING BUDGETS AND BUYING

WHAT AND HOW TO BUY

Income and Income Spending.—Incomes are earned through the labor of the member, or members, of a family upon whom this responsibility falls; they are spent by the earner, or some member of the family upon whom the business of spending devolves. Planning for wise expenditure of income presents one of the most important economic and household problems of the day.

Woman's Responsibility.—Upon woman, the chief spender, depends the wise or unwise apportionment of the income to the various needs of the family,—shelter, food, clothing, etc. The girl of to-day, whether or not her future sphere of activity shall lie in the field of business, teaching, or home-making, must assume her share of responsibility in the business of spending either her own income, or that of others. Whether or not she performs her part wisely depends somewhat upon the equipment furnished her by home and school.

Woman's Opportunity.—Abundant opportunity to learn to become a wise spender awaits her in the field of clothing. It is possible for her to provide for herself and others, for whom she may have need to buy, suitable wearing apparel that will not deplete the purse, yet give joy and satisfaction to the wearer. When purchasing ready-to-wear garments, she should be able to judge of them as regards their (1) durability and the quality of the materials of which they are made; (2) their suitability to occasion and wearer; (3) the becomingness of color and line, and (4) the price in relation to her allowance. If the allowance permits made-to-order garments, she should be able to make her own selection of materials and designs for the garments, and calculate approximately, at least, the cost of the making, in addition to the price of the materials. The same is true of the young woman who may make, in whole or in part, the garments she wears.

Her Training.—To become a master workman in the art of

clothing herself and others, wisely and well, the young woman should have an interest in the industries concerned in the making of women's apparel, in the production and preparation of the fibers of which the materials are made, the manufacture of the fabrics, and the construction of the garments themselves. She should become familiar with the principles of design which relate to clothing, and through the study of artistic forms in sculpture, painting and historic costume, learn to choose for herself and others, colors, lines and shapes that are becoming. Add to this, technical skill in clothing design, in the manipulation of fabrics in draping, or in the cutting of cloth by pattern, and in the use of needles, pins and shears in the construction of garments, and her equipment will be complete.

WHAT CLOTHING SHOULD DENOTE

Clothing and Circumstances.—Well-ordered clothing should, first of all, denote fitness to circumstances. We may dress as richly as our circumstances permit, but should let the keynote of that richness be simplicity. We should choose attractive and suitable garments or stuffs of pleasing colors. There should be evenness of attire; we should not sacrifice one garment for lavish expenditure upon another. Extremes of fashion are to be avoided; they are in bad taste, and moreover extravagant. To follow the extreme of fashion, is like chasing a will-o'-the-wisp; the fancy is subject to continual change, the purse to depletion.

Clothing Fit for Occasion.—Clothing should suit the occasion upon which it is to be worn. It is a grave mistake to go about unsuitably dressed, wearing clothing obviously meant for another occasion. A tweed tailored suit at a formal reception, a much frilled short-sleeved chiffon blouse in a business office, or a half-worn satin gown in the kitchen, do not bespeak fitness to occasion, yet how often are such "misfits" seen! The tailor-made suit were better replaced by a simple gown of inexpensive cotton material, if need be, but showing some note of the wearer's individuality; the satin dress were better made into a good petticoat, and the price of a petticoat expended on a suitable, but attractive, wash dress to take its place; and the chiffon blouse replaced by a semi-tailored waist of linen, cotton or silk. On the other hand, this fact is not to be lost sight of, that women, having established for themselves a place in the business world, need no longer adhere to that rigid type of costume with which they invaded the field, the "tailored shirtwaist and skirt." A

generous bit of femininity may enter into business attire, but let it be dignified, not frivolous.

Clothing and Environment.—Good sense should guide us in suiting our clothing to our environment. We should please ourselves in this matter, but we need not offend our neighbors nor make ourselves the jest of others. Social life in a small town necessitates fewer and simpler toilettes than the varied functions in a large city; the busy little housewife will have less use for be-ribboned negligée than the society belle; the girl who spends her summers in the hills, ten or fifteen miles from a railroad station, will have little use for French-heeled slippers and chiffon dance frocks. We have all seen such flagrant examples of a misguided sense of the fitness of things—the flaunting of finery by some before their less pretentious neighbors; soiled and draggled negligée meant only for a boudoir, garbing a woman at housework, or dainty slippers and chiffon gown trapesing across the lawn or dusty roads about a modest country house.

Clothing and the Wearer.—Last but not least, clothing should be chosen for its suitability to the wearer. It should be an expression of her highest individuality. It has been asked, "How many women dress for their own self-satisfaction?" Why should we not? Have we not set for ourselves standards of excellence, towards which we strive, in other modes of conduct? Why not, then, in the conduct of our clothing? We should never give ourselves over to a blind following of fashion; this dwarfs our individuality and handicaps our sense of freedom. Because scores of other women, dissimilar in every way except their ambition to be "in style," have adopted some particular mode of dress, is no reason that you and I should adopt it without further consideration.

Paul Poiret, speaking of the well-dressed woman, says: "The well-dressed woman picks out her gowns, her adornments, simply because they make her appear more pleasing, not because other people are wearing that style. * * * There is only one motto for the well-dressed woman, and the old Romans expressed it in one word, decorum, which means, that which is suitable. * * * It takes time and patience. It is hard to attain. And that is why there are so few well-dressed women. But those who really are well-dressed, enjoy a sense of satisfaction equal to the triumphs of any other art. And they impart a breath of life, beauty and color to things around them. They inspire a love of harmony, of good taste, above all, they are living examples of decorum."

It is our privilege to express ourselves in the matter of clothing, in terms of freedom, the freedom to think and choose for ourselves apparel that is individual, attractive, durable, well-cut and well-made. To be always well-dressed is one of the greatest assets a woman can have. And this is possible even to the woman of limited means. It becomes, in any case, a matter of the intelligent selection and purchase of her apparel, and the scrupulous care of the same.

PLANNING A WARDROBE

Allowance for Clothing.—It is the custom of many, and should be with all, to make a budget or plan for spending the income, so that a portion may be saved for education, travel, recreation, investment, etc. A certain percentage of the whole is set aside for shelter, food, clothing, and other necessary expenses; the percentage allowed for each varies according to the income, and the tastes and desires of those who plan the spending. In planning a family budget, the amount allowed for clothing is usually 12 to 16 per cent of the total; the percentage slightly increases as the income grows. Ellen Richards proposed an ideal family budget which allows 15 per cent for clothing, 25 per cent for food, 20 for rent, 15 for running expenses, and 25 per cent for the higher interests of life; and 15 per cent for family clothing is a good working rule for a family. When an individual or family budget has been made, and the allowance for clothing set aside, the "spender" should then apportion this allowance so as to provide for the purchase of all necessary garments. The times and methods of purchase must depend upon the "spender's" way of handling the allowance. This problem is worthy of thoughtful consideration, and it is to be hoped that every reader of this book, who may not have had an allowance to spend upon clothing, will seek to have such an arrangement made. The experience of planning a clothing budget will prove valuable in many ways; it enables one to learn not only how to spend well, but also how to dress well. There is no reason that the girl or woman of moderate or limited means should not be as attractively clothed as her affluent sister, if her garments be well-chosen. If one needs to count the cost of each garment, more thought is apt to be put upon the selection of clothing than when one simply yields to every fitful whim of desire.

Apportionment of Allowance.—A certain percentage of wearing apparel must be purchased ready-to-wear; hosiery, knitted underwear, corsets, shoes, slippers, overshoes, sweater, topcoats and

suits (usually), raincoat, umbrella, hats, gloves, handkerchiefs and handbag. Consideration must first be given to the number of each article needed, the approximate cost of each; and then distribution of the allowance be made, to meet the payment for these, and also allow for the purchase of other garments, both under and outer, either ready-to-wear, or the materials for their construction, and the accessories, without which the wardrobe would be incomplete. A list of each group is given below:

Undergarments.—Corset covers and drawers, combination or chemise, petticoat, nightgown, bathrobe, kimono, and swimming or bathing suit.

Outer-garments.—Middy blouse, cotton, linen or silk shirt, lingerie blouse, cotton and woolen skirts, cotton wash dress, lingerie dress, wool dress for school or street, silk dress for informal occasions, party or evening gown of cotton or silk.

Accessories.—Collars, cuffs, ties, belts, girdles, camisole or underbodice, scarfs, nets, parasol, fan, hairpins and combs.

Three Ways of Buying.—Whether the wardrobe be composed of made-to-order, made-at-home, or ready-to-wear garments, must be decided by the individual spender.

Made-to-order garments are expensive; one pays for good materials, and also for the time and skill of the workers engaged upon them, therefore the number of these must necessarily be limited for a moderate income, if any at all be purchased.

Ready-to-wear garments are better cut and better made than formerly, and as the number of medium priced well cut garments is increasing it is possible to supplement the garments made at home with the ready-to-wear which are attractive, of good quality, and within the limit of the purse. If need be, the entire wardrobe can be chosen from well-selected stocks of ready-to-wear garments. This requires skill on the part of the purchaser to judge of the quality of the fabric and the price as well as suitability to the wearer.

Garments made at home are a great saving of income, and are desirable for the high school or college girl, the home woman, and the woman in business, because, not having to pay so much for the making, more can be expended on a better grade of material, which insures longer service. They can often be made by some member of the family, part of whose time may be given up to this; the efforts of this worker may be supplemented by those of the wearer, in odd minutes or vacation time. Busy, overworked mothers should not be

further burdened with the task of making many garments, nor should the girl at school or college, nor the woman in business be pressed with work of this sort in her leisure hours, but a bit of sewing kept at hand to be picked up during a chat with the casual visitor, on rainy evenings, or when one feels in the mood for it, will not fatigue the worker, but will do wonders in the amount of work accomplished. It is the knowing how that counts alike to the school or college girl, the business woman, or the woman of leisure who may wish to direct her seamstress or engage in philanthropic work in which the teacher who knows how is an inspiration to her class.

Rejection of Worn or Unsuitable Garments.—At the close of each season, when garments are to be put away for future wear, all outer-garments should be carefully brushed, aired, folded and wrapped in paper or cloth to keep out dust, and in the case of woolen garments, with camphor balls inside the wrappings to protect from moths. When garments are badly soiled, they should be cleansed before putting away, either by a professional cleaner or one's self. All undergarments should be washed and mended if necessary. They will then be ready for wear on the first warm or cold days of the following season. If one be fortunate enough to have a large dark closet, all woolen or fur garments may be hung on garment hooks and covered with moth-proof paper bags.

Garments showing possibilities of reconstruction for one's self or another member of the family, should be ripped and brushed, or cleansed, and then pressed, ready for the remodelling process. Worn and unsuitable garments, if not beyond repair and future service, but past service for one's self, may be cleansed, and passed on to some charitable organization which will look after their repair or reconstruction, before giving them over to those in less fortunate circumstances. A list of all garments to be kept should be made with notes of the possibility of further service or reconstruction; this should be kept where it may be easily found when the time for planning reconstruction is at hand. A list of necessary garments to be purchased should then be made, and approximate amount to be spent apportioned, with a balance to provide for repairs and cleansing.

Selection of New Garments.—Each garment in one's wardrobe, or the materials for its construction, should be selected with the following consideration: 1. The need for its purchase; 2. The use to which it must be put; 3. Its durability; 4. Its suitability to the wearer; 5. Its cost in relation to the allowance.

PURCHASE OF READY-TO-WEAR GARMENTS

Hosiery.—Buy hosiery of the best wearing quality the allowance permits, of proper size (many buy too short a length), and of sufficient number to admit of daily changes, in order to save strain of wear. Find standard makes the colors of which will not fade or crock, and which have good wearing quality.

Knitted underwear, in cotton, wool or silk, is to be had in one- or two-piece suits. The one-piece suit is to be recommended as less bulky. The choice of fiber depends upon one's idea of comfort and of the necessity of economy. The kind of garment may be left to individual taste, as the expense is about the same for one- or two-piece garments. Silk and wool approximate each other more in price; cotton, which is much less expensive, is to be recommended for economy in frequent laundering.

Corsets should be bought where attention is given to careful fitting, unless one can afford to have them made to order. They should be soft and pliable, admitting free movement of the body, and comfort whether standing or sitting. Few bones are necessary for slight figures; heavier boning but not too stiff, for stout figures.

Shoes and Slippers.—Individual taste and comfort must guide the buyer of shoes in making her purchases. Do not try to economize foolishly in this direction. Choose shops in which intelligence directs the fitting of the foot. Find the type of shoe that, for constant wear, gives the most comfort (which type need not make the foot look ugly), and stick to that type, with its variations for dress occasions or for service. Wear a broad toe if that fits the foot; high heels are not desirable for regular wear. Do not wear anything that is uncomfortable—you can obey this rule and still clothe the feet in good-looking shoes. Have an extra pair to change about for daily use; this rests the feet and prolongs the life of the shoes. Keep shoe-trees within the shoes when not in use; this adds to their length of service. Overshoes should fit the shoes upon which they are worn.

Sweaters for hard service are better made of wool. Attractive sport garments are made of fiber silk, bringing the cost within the limits of a purse which could not contemplate a silk sweater.

Handkerchiefs and Gloves.—Inexpensive handkerchiefs of linen can be found in special sales. One should have a plenty and a few "Sunday best" beside, to help keep one fresh and trim in matters of small detail.

In the matter of gloves, it is not always wise to accept the product

of the special sales; at sales, buy only standard makes that are specially priced. If one has short- and long-sleeved summer garments, both long and short silk gloves will be needed. Buy only good silk gloves, they repay in their length of service. Have kid gloves tried on in the store; a flaw may then appear which will save an extra trip to return the same. Heavy kid gloves for winter wear should be easy in fit, else the hands become cold. Double cotton gloves in white or colors are inexpensive compared with kid, because one can wash them daily, and they are warm enough for winter wear.

Umbrella and Handbag.—Silk umbrellas do not give long service for school or business use. There are various other coverings of cotton mixtures which are not unattractive, but are serviceable; union is the least expensive, gloria a better grade, but slightly more expensive. Silk is more expensive, but is more attractive, less bulky and can be had in colors,—dark blue, red or purple,—which brighten a dull or rainy day. Natural wood handles well finished, are the most pleasing and satisfactory. A colored silk umbrella is more attractive if but one can be afforded for both sun and rain.

Handbags for everyday use should be of good leather, well lined, containing purse and other suitable fittings. They should be of convenient size, with handle through which one can slip her arm and hold the bag securely. The catch should be strong and not easily opened. The color of the bag, if other than black, should harmonize with the costume.

Top Coat, Raincoat, Suit.—These garments may all be made to individual measure or be purchased ready-to-wear. If made by the small neighborhood tailor whose work is sometimes very good, the cost would be about the same as the ready-to-wear garment, allowing for possible alterations. The custom tailor in shopping districts would charge a more prohibitive price.

Hats.—The selection of hats is one of the most critical features of the clothing process. Hats, shoes, and gloves are the points of a woman's costume which most quickly offend or gratefully please the eyes of the beholder. It has been said, let the eye rest upon a becoming hat and it matters little to the beholder what the gown beneath may be. While this statement is not quite true, much truth lies therein; we get an impression of the whole but the eye does linger at the point of greatest interest, and if that point happens to be a becoming hat, the impression lasts. It is desirable to wear the suit or gown with which the hat is to be worn when making a choice.

Another point to remember, is not to try to buy a hat when one has shopped about all day. Go fresh to the task; do not hurry or be over-persuaded. Seek the saleswoman who leaves you alone with the hat and your reflection in the mirror until you have had time to "make up your own mind." Many things should be considered when purchasing a hat: Colors unbecoming when worn under the face, may often be attractive when worn above. The shape of the hat should be in harmony with the contour of the head and face, and the style of dressing the hair; its size should be in proportion to the size of the head, and in relation to the natural method of dressing the hair. The weight of the hat should be, or seem to be, easily borne by the head upon which it is worn; its style must suit the poise of the head, and withal, the wearer should, if possible, see the effect of the whole costume in a full-length mirror, with front, side and back views of the hat, before making a final choice.

CLOTHING BUDGET

Clothing budgets can be, at best, but suggestive plans upon which the individual consumer may base her own expenditures. The following budget is suggested as a plan for a business or professional woman, living in a large city; a woman of average height, weight and measures, who allows herself $150.00 per year to spend upon her clothing. When considering this budget, it must be borne in mind: 1. That the same could serve for a high school or college girl, or the woman at home, if the necessary changes in the type of garments be made to suit the needs of the individual wardrobe; 2. That the young woman living in a large town will not have the same opportunity for buying "specially priced" garments as the city girl; 3. That the woman of larger height, weight and measure, must make allowance for the additional wear and tear on her clothing, by reason of her size, and therefore purchase extra undergarments; 4. That when garments can be made at home, while the initial cost may not be less, the additional length of wear makes for saving; 5. That the prices quoted might vary from season to season, according to political, commercial, or financial conditions. This budget covers a period of three years, showing the interchange of garments to be bought; it is always economy to plan a clothing budget over a period of three years. At the end of each year, some of the garments should be wearable a part of the next, until the time arrives for buying specially priced garments.

Clothing Budget for Three Years for Business or Professional Woman Who Can Spend $150.00 Per Year for Clothing

	1st year	2nd year	3rd year
Outer-garments			
Tailored wool suit, ready-to-wear	$25.00	.....	$25.00
Tailored linen suit, ready-to-wear	10.00	.....	.....
Top coat, ready-to-wear	.....	15.00	.....
Evening coat, made-at-home	.....	.....	10.00
Raincoat, ready-to-wear	5.00	.....	5.00
Summer sports coat, ready-to-wear	.....	5.00	.....
Sweater	.....	5.00	.....
Tailored silk waist for suit	3.50	3.50	3.50
Dressy waist for suit	5.00	5.00	5.00
Lingerie waists, 2 at $2.00	4.00	4.00	4.00
Silk shirt	3.50	.....	3.50
Cotton shirts, 2 at $1.00	2.00	2.00	2.00
Middy blouse	1.00	.....	1.00
Separate wool skirt, semi-made	4.00	.....	4.00
Separate linen or cotton skirt	2.95	.....	.....
Wool afternoon dress	.....	12.50	.....
Silk afternoon dress, bought out of season	.....	.....	10.00
Evening dress, bought out of season	.....	10.00	....
Lingerie dress	.....	.....	5.00
Cotton or linen street dress	3.00	3.00	3.00
Undergarments			
Union suits (summer), 4 at $1.00	.....	4.00	.....
Union suits (winter), 4 at $1.00	4.00	4.00	4.00
Chemise, 4 at $1.00	4.00	4.00	4.00
Petticoats, white	1.25	1.25	.....
Petticoats, silk	4.00	4.00	4.00
Petticoats, sateen	2.00	2.00	2.00
Night-dress, 3 at $1.00	3.00	3.00	3.00
Brassieres, 2 at $1.00	2.00	2.00	2.00
Kimono	1.00	.....	.....
Bathrobe	.....	.....	3.00
Corsets	3.50	3.50	3.50
Hosiery	4.00	4.00	4.00
Shoes, Hats, Gloves, etc.			
Shoes, winter boots, laced	4.00	.....	4.00
Shoes, winter boots, button	.....	4.00	.....
Shoes, Oxford ties, black	3.50	.....	3.50
Shoes, Oxford ties, white	.....	3.50	.....
Pumps, dress	3.50	.....	.....
Pumps, street	.....	.....	3.50
Bedroom slippers	.....	.50	.....
Rubbers	1.00	1.00	1.00
Sport shoes	.....	2.50	.....
Hats, winter hat, business	4.00	4.00	4.00
Hats, winter hat, dress	8.00	.....	.....
Hats, winter hat, dress, remodelled	.....	.....	4.00
Hats, summer hat, business	4.00	4.00	4.00
Hats, summer hat, dress	.....	8.00	.....

Clothing Budget for Three Years for Business or Professional Woman Who Can Spend $150.00 Per Year for Clothing—Continued

Shoes, Hats, Gloves, etc.—Continued

	1st year	2nd year	3rd year
Hats, summer hat, remodelled	.....	.....	$4.00
Gloves, dog-skin	$1.00	$1.00	1.00
Gloves, white kid, 2 at 90 cents	1.80	1.80	1.80
Gloves, white cotton, 3 at 50 cents	1.50	1.50	1.50
Gloves, white silk, 1 at $1.00	1.00	1.00	1.00
Handkerchiefs, 1 doz. at $1.00	1.00	1.00	1.00
Umbrella	.....	3.00	.....
Handbag	.....	.....	1.50
Accessories			
Parasol, special sale	2.00	.....	.....
Fan	.....	.....	.15
Necktie, collars and cuffs, belt, veils ($3.00)	3.00	3.00	3.00
Sundries			
Dress-shields, hairpins, pins, combs (side and dressing), brushes (hair, hand and tooth), toilet preparations (soap, tooth paste, talcum, etc.)	4.00	4.00	4.00
Repairs and cleaning	5.00	5.00	5.00
	$146.00	$145.55	$158.45

Approximately all garments listed in the budget above are priced as ready-to-wear garments. A great saving in cost could be made if some of the undergarments, lingerie waists, skirts, kimonos, etc., were made at home; a saving also by reason of the use of better materials, insuring longer service than those of the ready-to-wear type.

MADE AT HOME COSTS

The following estimates are listed as a guide for calculating approximate quantities of material, and the cost of the same for garments to be made at home. The list states the exact amount expended on garments shown in Figs. 161, 164, 165, 166, 167, 168, 169 (pp. 266–290).

Corset Cover, Fig. 161

1 yard nainsook, .25	$0.25
2½ yards lace, .15	.38
1 yard beading, .25	.25
1½ yards ribbon, .05	.08
1 skein embroidery cotton, .03	.03
4 buttons, .01	.01
	$1.00

Drawers, Fig. 166

1½ yards Berkeley cambric, .23	$0.35
2 yards entre-deux, .12	.24
Thread	.04
Buttons	.01
Pattern	.10
⅓ yard nainsook, ruffle	.10
	$0.84

Drawers, Fig. 167

1½ yards nainsook, .25	$0.38
2 yards lace, .35	.70
2 yards lace, .25	.50
2 yards beading, .25	.50
4 yards ribbon, .06	.24
	$2.32

Petticoat, Fig. 164A

2 yards Berkeley cambric, .23	$0.46
2 yards embroidery, flounce, .65	1.30
Cotton thread	.04
Buttons	.04
	$1.84

Petticoat, Fig. 165

3 yards nainsook, .25	$0.75
2 yards lace, .50	1.00
2 yards lace, .35	.70
2 yards lace, .25	.50
2 yards lace, .15	.30
2 yards beading, .35	.70
3 yards ribbon, .19	.57
6 yards entre-deux, .10	.60
	$5.12

Petticoat (Utility), Fig. 164B

4½ yards white poplin, .18	$0.81
4 skeins of embroidery cotton	.10
4 buttons	.01
	$0.92

Night-gown, Fig. 169

4 yards nainsook	$1.20
1¼ yards beading	.34
2⅓ yards lace edging	.20
2½ yards ribbon	.05
Thread	.03
	$1.82

Night-gown, Fig. 170

5 yards nainsook, .25	$1.25
2½ yards lace, .35	.88
2½ yaads lace, .25	.63
2 yards beading, .25	.50
1½ yards beading, .35	.53
2½ yards ribbon, .19	.48
2½ yards ribbon, .06	.15
	$4.42

SUGGESTIVE QUESTIONS

1. What is meant by income? What is a budget?
2. How can a high school girl learn to become proficient in clothing herself well?
3. Name four things which well-ordered clothing should denote.
4. Compare the advantages of garments made-to-order, made-at-home, and ready-to-wear.

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CHAPTER II

FABRICS—FACTS FOR CONSUMERS

In order to become wise and intelligent buyers, not only of fabrics, but of ready-to-wear garments as well, purchasers should have a practical knowledge of the textile field. They should know, first, the names and general characteristics and qualities of the fibers used in the manufacture of the cloths of which their garments are made; second, the methods of production and preparation of these fibers for manufacturing purposes; third, enough of the processes of weaving the cloth to be interested in the value and effect of the different weaves; fourth, the adulteration of fibers practised by the manufacturers to the detriment of the cloth and the deception of the consumer; fifth, the names, prices and widths of staple materials, and such findings as tapes, braids, etc., and the general uses to which they may be put; sixth, the condition of the laborers engaged in the making of women's garments, that sympathy and interest may be stirred to help in the betterment of these conditions.

It is scarcely within the province of this book to enter into a historic or scientific discussion of textiles. Abundance of good material on this subject is to be found in the numerous texts listed in the bibliography. It is the purpose of the writer, however, to review briefly the points mentioned above, with emphasis on the acquisition of the knowledge of the names and characteristics of materials and findings used in the construction of garments.

All cloth of whatsoever kind, whether used for under- or outergarments, is made by the interlacing (or weaving) in some fashion, of yarns, made by the twisting of one or more kinds of fiber. The four fibers most commonly used in the manufacture of cloth, are cotton, linen, wool, and silk. These are classified in two general groups, vegetable and animal fibers. The value of a fiber in the weaving process depends upon the following qualities: length, strength, elasticity, and curl.

FIBERS AND THEIR PRODUCTION

Cotton fiber from which cotton cloth is made, is the soft, white, downy substance, or seed hairs, which enclose the seeds of the cotton plant, within the pod or "boll" until ripened (Fig. 1). Under the microscope it shows a flat ribbon-like fiber with thick edges and

a slight twist at intervals throughout its length, which varies from one to two inches. The twist gives it elasticity and makes it valuable for spinning. It has a single cell, the walls of which are thick and covered with vegetable wax and oil. Cotton has some elasticity; its

FIG. 1 FIG. 2

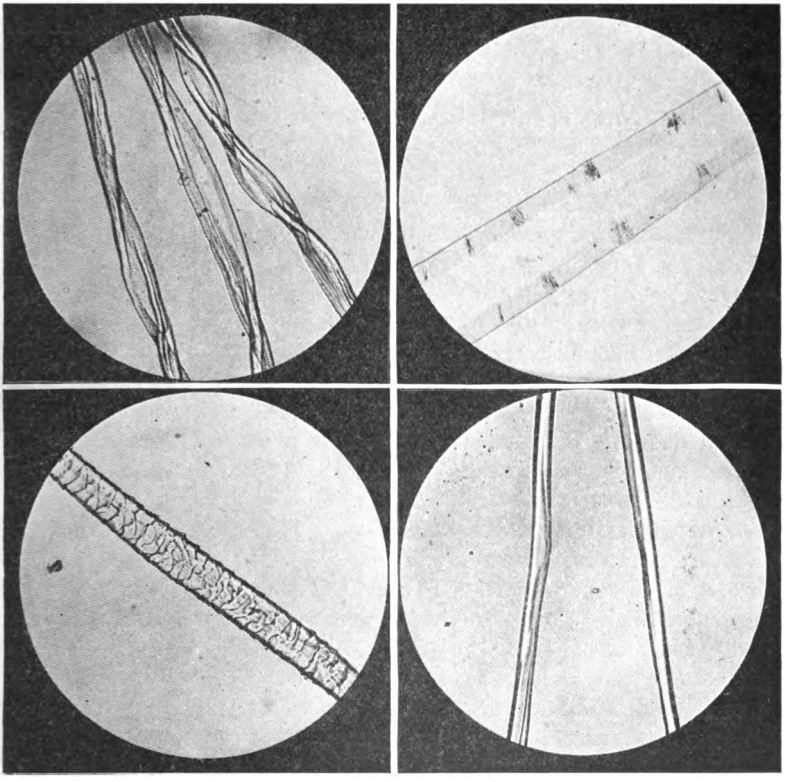

FIG. 3 FIG. 4

FIG. 1.—Cotton fiber, magnified. (U. S. Dept. of Agriculture.)
FIG. 2.—Flax fiber, magnified. (U. S. Dept. of Agriculture.)
FIG. 3.—Wool fiber, magnified. (U. S. Dept. of Agriculture.)
FIG. 4.—Silk fiber, magnified. (U. S. Dept. of Agriculture.)

hygroscopic or absorbent quality is 5 to 8 per cent, but it can, in moist atmospheres, absorb more than this. It has less luster than linen, even when mercerized. The surface of cotton cloth is fuzzy. Cotton is not quite as good a conductor of heat as linen, but being

much less costly to manufacture, is more generally used for clothing.

Cotton fiber passes through many processes in preparation for weaving into cloth. When the bolls have ripened and opened, the cotton is picked and sent to be "ginned," that is, to have the seeds removed. This is done by machinery. The cotton is then packed into bales, covered with heavy bagging and bound with iron wire hoops; these bales weigh 500 pounds. The bales are then compressed and shipped to the factories where the cotton is to be spun into yarn, preparatory to weaving into cloth. When the bales are opened, the cotton is found not only tangled from long compression but is also full of dirt, bits of leaves, seeds and pods. It is cleaned by machinery which removes the bits of leaves and seeds. Other machinery smooths out the fibers and lays them parallel to each other; as they come from these machines they are drawn into a thick strand called a sliver. If very fine yarn is to be made, a similar process is gone through which removes all short fibers, causing much waste and therefore increasing the cost of the woven fabric. The slivers of cotton are then put into other machines which draw them into thinner strands and at the same time put in a twist, which renders it possible to make greater attenuations. These twisted strands are wound on large bobbins placed in other machines which draw the strands out into fine threads, put in a twist and wind them again on spindles. The yarn is afterwards unwound from the spindles, wound into hanks, and bleached, then dyed. The bleaching is done by chemical processes. Cotton fiber does not take dyes easily, therefore it is necessary to treat it with some chemical preparation in order to make it take and hold the dye. It is dyed both in the yarn and cloth, and colors are sometimes printed on the cloth. Cotton fiber having no luster of its own, is often treated by a chemical process called mercerization, which not only renders the fiber stronger, but adds a luster not unlike that of linen.

Flax fiber, of which linen cloth is woven, is a bast fiber which lies just under the outer bark of the flax plant. Under the microscope it appears to be a cylindrical fiber, with pointed ends, cellular in structure, with lines or cracks crossing at intervals along its length (Fig. 2). The fibers vary from 12 to 36 inches in length. They have a high luster, are stronger than cotton fiber, but have no twist, and are not elastic. Flax fiber has an absorbent quality of 5 to 8 per cent, but may reach 20 per cent. It is the best conductor of heat of the four fibers.

The preparation of flax fiber for weaving involves many tedious processes. The plants grow to a height of 20 inches to 40 inches. The time for pulling, which must be done by hand, is indicated by the changing of leaves from green to brown. The plants are pulled up by the roots in clear, dry weather. The seeds and leaves are next removed and the plants tied in bundles, and the process of fermentation begun, which separates the bast fibers from the other portions of the stems. This is called "retting" and is done by letting the bundles lie in the grass in dew and sun for a longer or shorter period, sometimes two weeks. It is also retted in pools of stagnant water, in streams of running water or by the use of chemicals. After retting, the plants are dried; then the woody parts are crushed and broken away from the rest of the stem by machinery. A process called "hackling" is used to remove all woody parts from the fiber. Short and long fibers are separated in this process, the tow or short fibers being used for coarse yarns, the line or long fibers for fine. The fibers are then drawn out into a thick strand like the cotton and a slight twist put into it. This short strand or roving, as it is called, is then spun into yarn. Flax fibers also require moisture for the spinning. The warp threads must be harder twisted than the woof.

Linen is bleached in the cloth or yarn, mostly the former. This is a long process because of the nature of the fiber. The bleaching is done by dew and sun, and also by the use of chemicals. By the latter method, unless most carefully done, the fiber may be injured. Linen does not take dye easily; it is more difficult than cotton to dye and does not retain the color well.

Wool fibers, from which woolen and worsted cloths are made, is the coat or covering of the sheep. A single wool fiber is a hair, fine and curly, varying in length from 1 inch to 8 inches. Examined under the microscope, it is seen to have scales or serrations with pointed edges, which stand out from the fiber (Fig. 3). These scales open when warm and moist, somewhat as a pine cone does, and the edges interlock. Then as they cool, they draw together and dry, not opening again. This holds the fibers close together, causing shrinkage in the cloth and aiding in the felting process.

Wool fiber is very soft, elastic and varies greatly in strength. It is a poor conductor of heat, therefore is desirable for clothing; it has a greater affinity for dye than any other fiber. Its luster varies with its structure, *e.g.*, mohair having few scales, is very lustrous. the absorbent quality of wool is 8 to 14 per cent, but may reach 30 to

50 per cent. Wool fibers are more expensive than fibers of linen, not only in the initial cost of production, but by reason of the various weaves and finishes necessary to produce certain types of fabrics.

Wool is sheared from the sheep either by hand or machine. These shearings are called "fleeces." The fleeces are packed and shipped to the mills. The wool is first opened and sorted because the portions from the different parts of the sheep vary in quality. The wool being very dirty, is then scoured thoroughly and carefully dried; this process does not remove the burrs, seeds, and leaves, which are taken out by machinery or the use of chemicals, in which latter case the wool must be washed again to remove both chemicals and pieces of burrs. Other processes follow; blending, or the addition and mixing of other kinds of wool fiber in raw or manufactured state, or mixtures of other fibers for the purpose of securing good colors or reducing the cost of production, and then oiling to keep the fiber soft during the remaining processes, because the many washings have taken away most of the natural oil. These processes vary according as one or the other of two kinds of yarns, woolen or worsted, is to be prepared for spinning. The first is used for such materials as broadcloth, kersey, or flannel, while the second is used for serges, men's suiting, covert cloths and diagonals. More processes are involved in the preparation of worsted than woolen yarns: in woolen yarn, carding alone is employed, while in worsted yarn many processes are employed, carding, gilling, combing, all of which have one purpose, thoroughly to parallelize the fibers in order to produce an even, close, twisted, lustrous yarn. Woolen yarns are softer and more elastic than worsted.

Silk fiber is a secretion emitted by the silk worm in the formation of a cocoon, in which the worm encloses itself before its transformation into a chrysalis. It is the strangest of the four fibers, is smooth and structureless, but very elastic (Fig. 4). Silk fiber may be reeled from cocoons in length from 400 to 1300 yards. It has a greater affinity for dyes than cotton or linen, and takes the highest luster of the four fibers. It is a poor conductor of heat: its absorbent qualities are 10 per cent to 17 per cent, and may reach 30 per cent.

Silk fiber necessitates great care in the rearing and feeding of the worm and the reeling of the silk. The fiber is ejected by the worm at a certain stage in its growth, from two small openings below the mouth, but it is united in one thread by a gummy liquid which hardens as soon as it is exposed to the air. The worm attaches this

fiber to a branch, and by a motion of its head, throws the thread in irregular loops, somewhat like a figure eight. At first, it can be seen through the gauzy thread, but later is lost to view. It continues working until the cocoon is completed with the worm inside. The cocoons are then gathered and heated to destroy the chrysalis; then sorted, and those whose color, fineness and luster agree, are kept together. Before reeling the silk, the cocoons are dropped into hot water to loosen the gum which has held the fibers. All silk unfit for reeling is wound off, and then, with a brush, the reeler finds a continuous end from each cocoon. These he passes through an agate ring, twists them with a fiber coming from another ring, separates them again, and passes them through another ring to the reel, where they are wound into a skein. This silk is harsh, due to the gum which still adheres to it. The bundles of these skeins as sent to the manufacturer are called books. The further preparation of the silk at the factory is called throwing. Several strands of silk have already been twisted in making the skein, but the strand is not yet strong enough for weaving. The raw silk is wound from the skeins on to bobbins, and then cleaned so as to rid it of knots or irregularities. The threads from several bobbins are then united to form one, which is spun to give it the necessary twist. Two kinds of threads are made: organzine, used for warp, two threads twisted in opposite directions, then together, but twisted so tight that the luster is lost. Tram is the filling thread in silk cloth, made of two or more threads having no twist, which are put together and twisted enough to hold for the weaving process. The silk is then cleaned, that is, boiled off to remove all the gum; but washed in a warm solution, if only part of the gum is to be removed. The silk is chemically bleached if all the coloring matter is to be removed. The waste silk which cannot be reeled is washed, then carded and spun in a thread; it is called spun silk, in contradistinction to the other. Experimentation has resulted in the production of substitutes for silk of varying values. Silk is given color either by yarn or piece dyeing or by printing.

WEAVING

Weaving is the process of interlacing threads by which cloth is made. Two sets of threads are used, called: 1. Warp, and 2. Woof or filling; the weaving is accomplished by a machine called a loom, of which there are two kinds, 1. Hand, and 2. Power loom.

Definitions.—*Warp,* lengthwise threads, which carry throughout the length of a piece of cloth.

Woof, or filling, the crosswise thread, carried back and forth across sets of the lengthwise threads.

Parts of a Loom.—*Frame,* which holds the *Warp Beam* at the back of the loom; upon the warp beam the warp threads are wound before the weaving begins and unwound as the weaving proceeds.

Harness.—Two or more *Heddles* hung from the beam at the top of the loom frame, each heddle composed of two slats of wood between which are stretched loops of cord or wire called *Healds,* each one tied in the middle so as to leave a small hole or eye called the *Mail Eye,* through which a warp thread passes on its way to the *Reed.* Each heddle supports a certain set of warp threads, which may be raised or lowered by it.

Reed, a series of vertical wires in a frame set in the *Batten* or *Lathe,* which hangs from the top of the frame. *Batten* or *Lathe,* a frame of wood which hangs from the top of the loom frame, holds the reed and is used to beat the woof or filling into place.

Cloth Beam.—A roller at the front of the loom upon which the woven cloth is wound up as it is made.

Treadles, strips of wood below the loom, attached to the heddles, operated by the feet to raise or lower the sets of warp threads.

Shuttle, a boat-shaped piece of wood which holds the bobbin upon which is wound the woof thread; used to pass the woof back and forth between the warp thread.

Setting Up the Loom.—The *Warp Threads,* sufficient in number for the width of the cloth to be woven, and as long as the finished cloth is to be, are wound evenly on the *Warp Beam;* the end of each warp thread is passed through a *Mail Eye* or *Heald,* then between the wires of the *Reed,* the ends drawn over and fastened on the *Cloth Beam.* When the warp threads are passed through the heddles, if plain weaving is to be done, only two heddles will be necessary, therefore every other thread, *e.g.,* 1, 3, 5, 7, etc., will be passed through heddle No. 1, and the alternate ones, 2, 4, 6, 8, etc., through heddle No. 2; then when the heddles are attached, each to a separate treadle, by pressing down with the foot on one treadle, all the uneven-numbered threads in the warp will be raised, and the even numbers will be depressed, thus making an opening between the sets of threads, called a *Shed,* through which the woof can be passed, by means of the *Shuttle,* containing a *Bobbin* or *Reel* of the filling yarn. When the other treadle is pressed upon, the even numbers will be raised, and the uneven drawn down, making a new shed, through

which the woof is passed back again. Each time the woof is carried through it is called a *Pick;* the *Batten* or *Lathe* is drawn firmly forward against it, to push the pick into place; then the *Shed* is changed and another *Pick* is made.

Selvedge.—Every time the woof goes back and forth, it passes around the outer warp thread, thus forming the *Selvedge* on each side of the cloth.

Fancy Weaves.—For fancy weaving more heddles and sometimes more treadles are necessary, so that different arrangements of warp threads may be raised or lowered in order to produce a more or less fancy effect. This is done by tying certain combinations of heddles and treadles together, when one or more treadles are pressed down, certain heddles will be raised, others lowered, and all warp threads passing through each of the heddles must *work together* each time.

Hand Looms are usually built of wood and are worked by foot power on the treadles, the shuttle is thrown back and forth by hand, and the battening up of the filling is done by hand.

Power Loom.—The framework, etc., of this loom are usually made of cast iron, some few parts may be of wood. The motive power is water or steam, or, in modern looms, direct connected electric motors, and the harness is operated from below.

The above, known as "Harness Looms," are necessarily limited as to the number of patterns which can be carried out on them. But there is a machine called the "Jacquard Loom" upon which an almost unlimited variety of pattern may be carried out, *e.g.,* brocaded silks, ribbons, and linen (damask). Jacquard Loom is not a correct expression, however, as the loom or weaving method of putting in the filling and battening up is the same as in all looms, but the shedding mechanism is different. Instead of a harness composed of heddles, each of which controls the same threads each time, and is operated from below, the Jacquard attachment is above the loom, each heald hangs independent of all others, and can be operated independently, or in combinations with any others called for by the design being carried out. Each heald is attached to a vertical wire which has a hook on its upper end by which it hangs on a bar, but can be easily displaced or thrown off. Each wire passes up through an eye in one of a group of horizontal needles. At one end these needles, which work horizontally, enter a spring box which keeps them constantly pressed forward. At the opposite ends the needles

pass through and project beyond the "needle board," where they come in contact with a four-sided cylinder placed at right angles to the ends of the needles—each one-quarter revolution of the cylinder brings one of its side in contact with the needle ends. Over this cylinder pass cards with holes cut in them at each place where a needle end comes in contact with it. If holes are cut for *all* needles, they will all pass through and all the vertical wire hooks will be held in position to be lifted by the bar on which they are hung. Thus *all* warp threads will be *lifted* and no shed made, but if the places on the card for some needles remain blank or uncut, it will readily be seen that those needles will be held back, their vertical wire hooks thrown off the bar and so not lifted. Therefore, all these warp threads will remain down and a shed be made. So, for every shed of one repeat of a pattern, there will have to be a different card; these are laced together so that they pass in regular order over the cylinder.

Designs for Weaving.—The weaver on a hand loom and the one who sets up the power loom (harness or "Jacquard") must have some guide or design to follow so that the warp threads may be threaded through the proper heald and the proper heddles on the "harness" loom, and the cards for the "Jacquard" properly cut and operated for each pick of the filling. For this purpose, designs are worked out on paper which is divided by heavy lines into blocks of eight rows or squares each way. Each vertical row of squares represents one warp end and each horizontal row of squares one pick of the filling; when working the design, if it is desired to show that warp end 1 passes over pick 1, a mark is made in the lower left hand square of the block, to indicate that warp 1 is on top, the next square above is blank, showing that warp end 1 is beneath pick 2, and so on; wherever it is desired to show that a certain warp is on top of a certain pick, a mark is made in the square where these cross and a blank square indicates that pick is on top, warp underneath.

Weave may be divided into three fundamental classes—plain, or tabby, twill, and satin. Plain or tabby weave is the simplest that can be used, and is made by passing the filling over each alternate warp end, *i.e.*, 1, 3, 5, 7, etc., in the first pick and under the others, 2, 4, 6, 8; the next pick will be exactly the opposite, passing over ends 2, 4, 6, 8 and under ends 1, 3, 5, 7; the third pick is the same as the first and the fourth the same as the second, and so on, thus making a plain weave (Fig. 54).

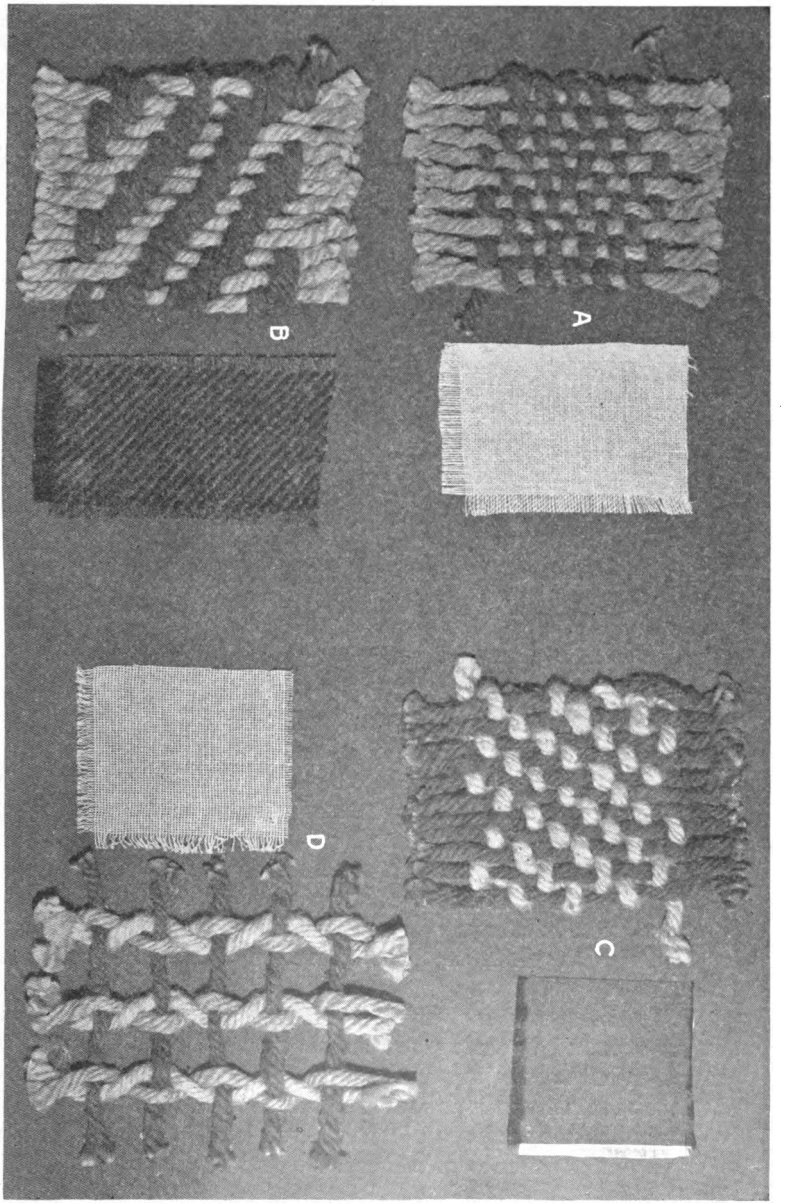

FIG. 5.—Methods of interlacing yarns to produce simple weaves; *A*, Plain; *B*, Twill; *C*, Satin; *D*, Leno or Gauze.

Twill weave gives a diagonal or twill line on the right side. Simple twill is made by passing the first pick of filling over warp 1 and under 2 and 3; over 4, under 5 and 6, etc., the second pick passes under 1, over 2; under 3 and 4, over 5; under 6 and 7, etc., the third pick passes under 1 and 2, over 3; under 4 and 5, over 6; under 7 and 8, etc. (Fig. 5*B*). Thus it will be seen that the filling passes under two warp ends, over one and under two, and that in each pick it passes over one warp in advance of where it passed over in the last pick, thus making a diagonal line through the cloth, and by passing always *under* two warp ends, more of the filling shows on right side than on wrong, as the latter is uppermost in the loom.

Satin weave is made by passing the filling over a number (from four to ten or twelve) of warp ends and under one, over a number and under one, etc. In the next pick the filling will not advance regularly when passing under the warp as in twill weave, but irregularly. For example, in the second pick, the filling may pass under the fourth warp—in the third pick under the second warp—in the fourth pick under the fifth warp, etc. (Fig. 5*C*). This gives the smooth warp surface of satin and does not show a definite line.

If the method is reversed by passing the filling *under* a number of warp threads and *over one,* thus giving a filling surface, it is called "Sateen Weave"; this is generally used only for cotton materials and the "Satin Weave" for silk and wool.

Leno or gauze weave is a fancy weave obtained by twisting or crossing each successive pair of warp ends between each two picks of filling. By this means, each warp end is always either on top or under every filling; for example, warp 1 is over pick 1 and warp 2 is under pick 1, then warp 2 crosses over warp 1 and passes under pick 2 while warp 1 passes over pick 2, they cross as before between picks and repeat; an additional mechanism is necessary on the loom to accomplish the crossing of the warp ends. This makes an open or gauzy weave as in marquisette or grenadines, and may be combined in stripes with plain or satin weave, or varied in many ways (Fig. 5*D*).

Pile weaves, used for velvets, plushes, corduroy, Turkish towels, etc., is obtained by using two sets of warp threads, one for the ground or back of the material and one for the pile, which is looser than the ground warp and is worked by the loom in such a way as to be brought to the surface in loops of even length, which in the case of velvet and plush are cut through the center, thus making a thick,

brush-like surface which entirely covers the ground. In corduroy, filling threads are used to form the loops; for Turkish towels the loops are formed by warp threads on both sides of the cloth and remain uncut.

EFFECT OF WEAVE, FINISH AND COLOR DESIGN UPON THE COST OF GARMENTS

1. *Surface Treatment.*—The attractive glossy surface of broadcloth and kindred fabrics is obtained after the cloth has been woven,

FIG. 6.—Silk brocade showing up and down in design, produced by weave.

by means of additional processes which greatly add to the cost of its manufacture. After weaving, the cloth goes through a lengthy fulling process, which so mats the fibers that they will never ravel.

FIG. 7.—Chiffon Brocade, illustrating waste of material in width when matching pattern of design.

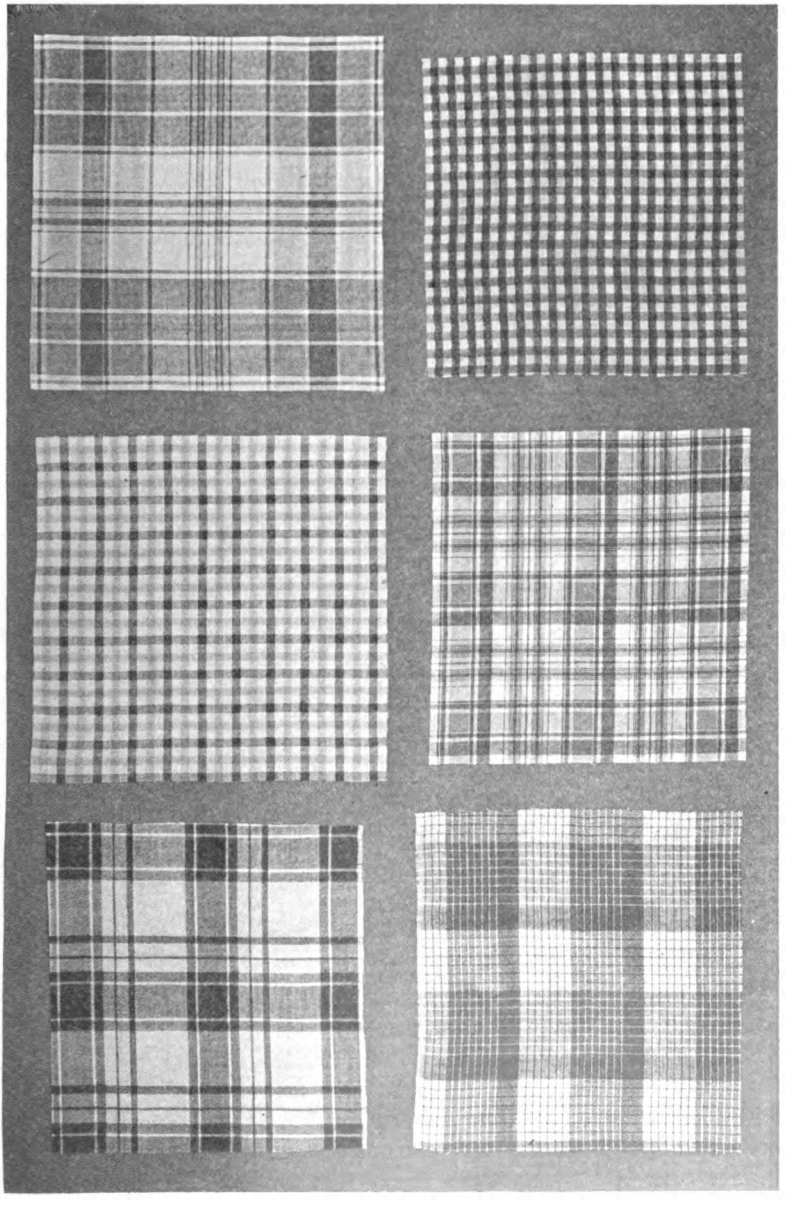

FIG. 8.— Plaids showing an even repeat right and left, and up and down in woven design.

The cloth is then napped, or roughed up, and sheared close, to give an even surface; it is then wetted, steamed, calendered, and pressed between hot rollers to make it lustrous. These repeated processes increase the cost of the fabric to the consumer.

2. Pattern in weaves, in self or other colors, may increase the cost of garments above that of plain materials. Figures, such as are found in brocades, swisses, etc., often produce an up and down, or right and left to the pattern, and by reason of their size, may waste considerable material in matching the pattern when seaming the parts of the gown (Figs. 6 and 7).

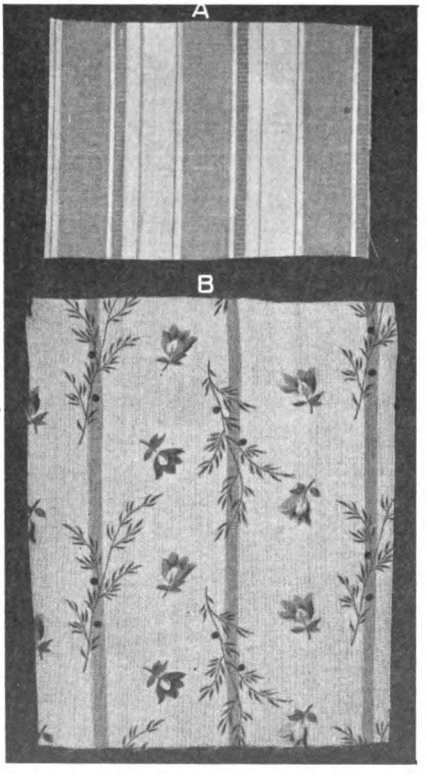

FIG. 9.—*A*, Striped gingham showing a left and right pattern in woven design: *B*, Challis showing an up and down pattern in printed design.

The use of colored yarns to produce pattern in weave, as in stripes and plaids, may necessitate the purchase of additional material by reason of the size of the pattern, or because of its uneven repeat of color and line, producing an up and down or right and left. Unless the design for such be carefully chosen one's figure may appear one-sided, to remedy which, the gown would need to be made with one-half wrong side out, which is not possible except with fine ginghams or similar fabrics (Figs. 8 and 9).

3. Pattern in printed design may produce the same results as above. Percales, lawns, dimities, and challis, in flowered patterns, are always more or less in vogue; in these the repeat of the pattern is sometimes irregular. If the pattern is small, it is not always noticeable, nor will it cause waste in cutting (Fig. 9*B*), but in large patterns this is not the case.

4. Color, such as produced in "changeable" silks, frequently necessitates cutting a garment as though the cloth had an up and down. Reversal of the pieces in cutting may make a complete change in the color. Some surface finishes, as in fine Henrietta, will show a difference in color if cut so as to reverse the pieces in a garment.

ADULTERATION

Tests for Adulteration.—Fabrics made of pure fiber, especially of wool, silk, or linen, are very expensive because of the cost of production. Consumers have demanded less expensive materials than formerly, therefore the manufacturers have found it necessary to reduce the cost of production by some one of several ways. A certain amount or kind of adulteration does not always affect the wearing quality of the fabric, but advantage has sometimes been taken of the buyer by the failure of the manufacturer to label the products honestly. Oftentimes, however, inferior stuffs are sold under the name and at the price of those of pure fiber. Consumers should become alert to the breaking down of this system of deception. They must learn the characteristics of the fibers, the method of adulteration, and ways and means of detecting the same. The constant improvements in the processes of manufacturing make it difficult, even for the expert, to determine whether materials are what is claimed for them. Consumers should learn to know the difference between staple fibers and cloths, both in appearance and the sensation produced by rubbing between the finger-tips. Staple cloths are those whose names, characteristics, and wearing qualities are generally known. To be able to recognize one well-known cloth, made from each of the four principal fibers, will greatly aid one in classification of other fabrics.

Methods of Adulteration.—*Sizing.*—Cotton cloth is adulterated by the use of starch or clay, which fills up the spaces between threads, making cloth appear closer and firmer than it really is; this adulteration also adds weight, which aids in the deception. A certain amount of sizing is necessary to make the cloth firm for commercial handling, but a greater quantity than is necessary is frequently used.

To detect sizing: In very thin materials, hold up to the light to see the starch; in heavier materials, brisk rubbing between the hands, will remove it, showing up the loosely woven threads. With some kinds of sizing, it will be necessary to wash or boil the fabric, to remove it. Linen is sometimes adulterated in the same way.

Addition or Substitution of Other Fibers.—Linen is also adulterated sometimes by adding cotton fibers to the linen, or by an entire substitution of cotton for linen fibres, the lustrous effect of linen being produced on the cotton cloth by means of calendering or being passed between hot rollers. The safest test for a mixture of cotton and linen fiber is the use of the microscope for testing the fibre, but microscopes are expensive. A simple test for the entire substitution of cotton for linen is to place a drop of olive oil upon the fabric; the oil makes the linen material more transparent than cotton. Another simple test is to break the threads; cotton breaks with a tufted, fuzzy end, linen with an uneven, pointed end.

Wool is also adulterated by the addition of cotton; sometimes a spun cotton yarn and a spun woolen yarn may be mixed, or cotton yarn may be used in the warp when weaving woolen material. Again, a microscopical test of the fiber is the surest means of detection. Burning may be employed; ravel a bit of the cloth and burn a warp and a filling thread—a cotton thread burns quickly and with flame, wool chars slowly, without flame, and smells like burning hair. A woolen material which has cotton in it will become more wrinkled when wet than "all wool." Shoddy or made-over wool is also added to new wool to give an "all wool" fabric at a lower price; this is made of discarded woolen rags, made over into fiber and re-spun; this gives a shorter fiber than new wool, and when mixed with new wool can be detected by ravelling out a thread, when the short, broken fiber can be seen. Shoddy is sometimes woven alone into cloth, which, while comparatively good, is not so handsome and does not wear as well as new wool.

Cotton is not always considered an adulterant when mixed with wool, as in the case of mohair and alpaca, which usually have a cotton warp—these are not sold for "all wool" and do not command an "all wool" price.

Silk is sometimes woven with cotton, plain or mercerized, but cannot be spun with it. The burning test will apply here. Silk burns much like wool and leaves a small amount of crisp ash. Mercerized cotton is sometimes passed as silk under the name of pongée, tussah, or rajah. Silk is often adulterated by weighting or leading with metallic salts of tin or other metal which, when used in large quantities, soon causes the silk to cut. This is best detected by burning. The ash of weighted silk retains the original shape of thread or fabric and drops to pieces at a touch.

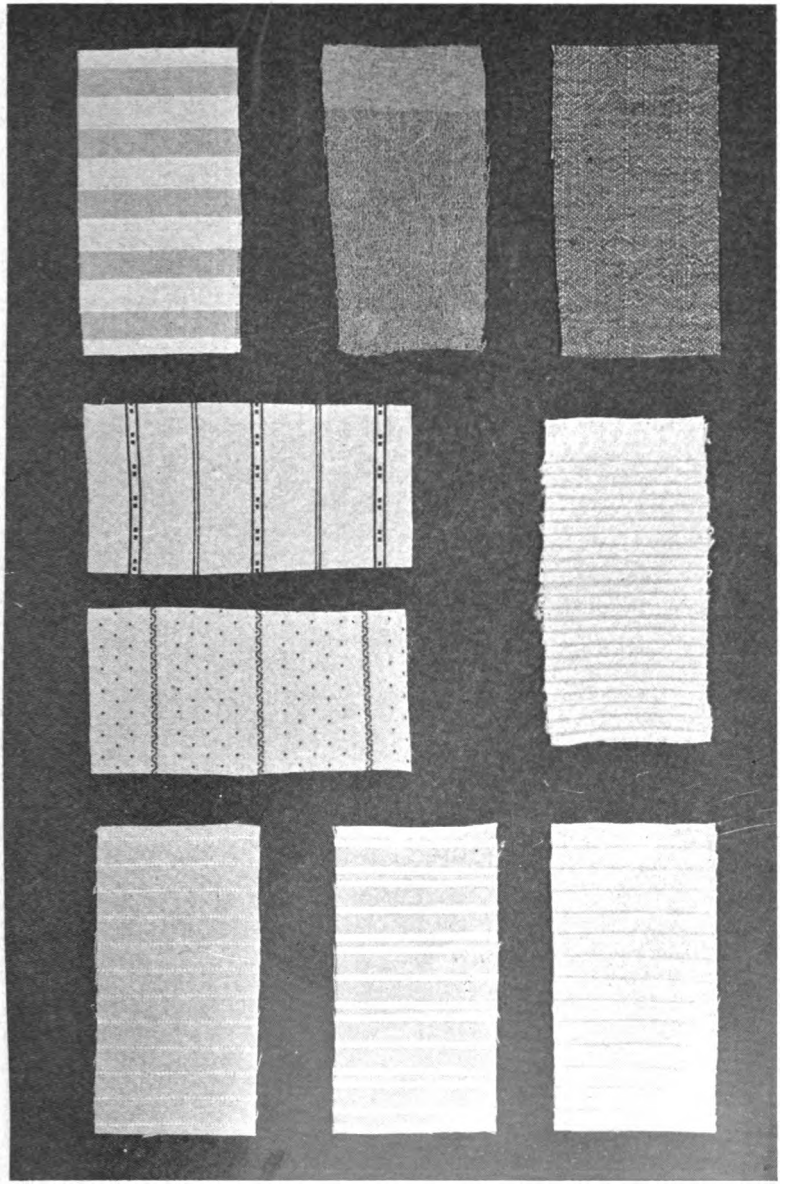

FIG. 10.—Cotton fabrics suitable for wash dresses, skirts and shirt waists.
Upper row (left to right), gingham, domestic crêpe and Japanese crêpe.
Second row (left to right) percale (striped), and corduroy.
Lower row (left to right), heavy madras (2), and pique (1).

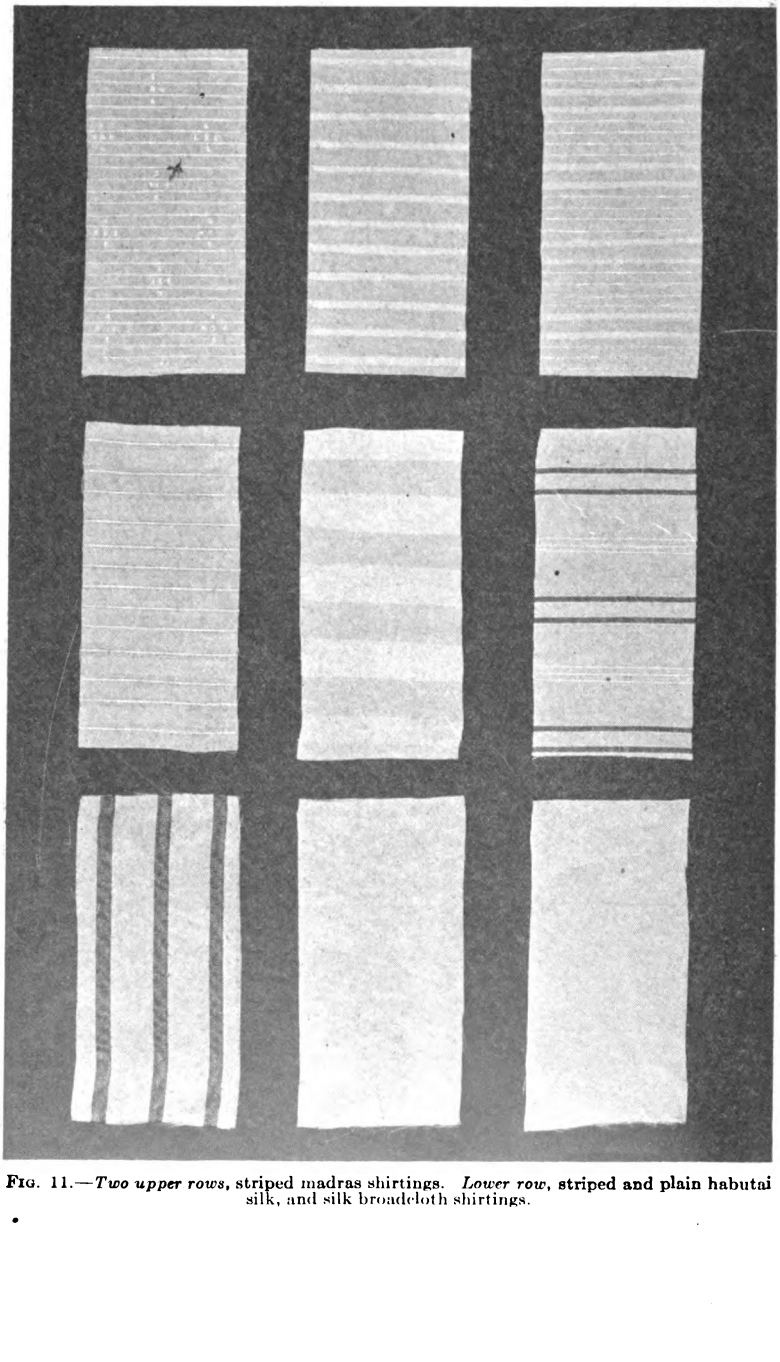

FIG. 11.—*Two upper rows*, striped madras shirtings. *Lower row*, striped and plain habutai silk, and silk broadcloth shirtings.

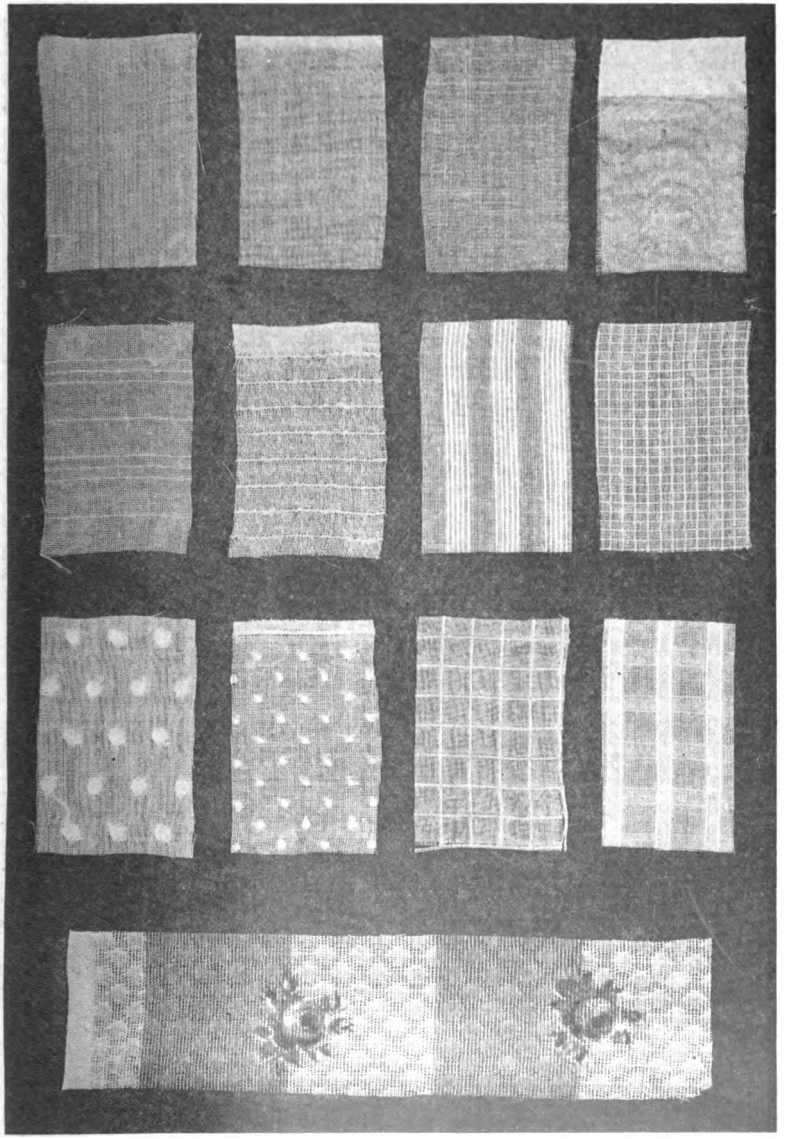

FIG. 12.—Cotton fabrics suitable for lingerie blouses and dresses.
Upper row (left to right), batiste (mercerized) Persian lawn, handkerchief linen, and voile.
Second row, striped crêpes (2), and striped and checked dimity.
Third row, embroidered Swiss (2), and flaxon (2).
Lower row, fancy flowered voile.

Staple Materials

This table lists materials which are used in the construction of under- and outer-garments, classified as to, fiber, weave, price, width, and description. Standard materials in general use are shown in Figs. 10, 11, 12, 13, 14, and 15.

Name	Fiber	Weave	Width	Price	Appearance and Use
			Inches		
Albatross	Wool	Plain	38–40	$ .75–$1.00	A soft crêpe like wool; suitable for light weight school or simple afternoon dresses.
Armure	Silk	Armure	36–40	$1.50	Soft, semi-lustrous, heavy silk; beautiful weave. Dresses.
Basket Cloth	Wool	Basket	45–50	$1.00–$2.50	Soft wool, loose woven cloth. Used for dresses and skirts.
Batiste	Cotton	Plain	32–45	$ .35–$1.00	Fine sheer material, used for lingerie waists and summer dresses. Also light weight wool dresses.
	Wool	Plain	45	$1.00–$2.00	
Bedford Cord	Wool	Plain	48–54	$1.50	Corded wool, cord running lengthwise of cloth; used for dresses.
Bengaline	Silk	Cord	22–36	$2.00	Heavy corded silk. Afternoon coats, etc.
Bouclè	Hair or wool				Woven into cloth to produce a curled surface.
Brilliantine	Cotton or silk warp hair filling	Linen	45–54	$1.00–$2.00	Glossy, hard surface. Used for suits, skirts, and petticoats.
Broadcloth	Wool	Plain or twill	50–60	$2.00–$5.00	Smooth-faced cloth, high gloss. Suits, coats, dresses.
Brocade	Cotton	Figure	27	$ .50	Pattern in self or contrasting color raised on the cloth.
	Linen		36	$1.00	
	Silk		27–40	$2.00–$5.00	
	Satin		27–40	$2.00–$5.00	
	Wool		45	$1.50–$4.00	
Calico	Cotton	Plain	25	$ .07	Inexpensive printed cloth; used for aprons, suit covers, etc.
Cambric	Cotton	Plain	25–36	$ .06–$ .30	Fine cotton fabric used for undergarments. Coarser weaves used for patterns.
Cashmere	Wool	Twill	42–45	$ .75–$1.50	Soft, fine twilled woolen material. Dresses. Usually in plain colors.
Challis	Wool or cotton and wool	Plain	32	$ .65–$1.00	Fine wool material, suitable for afternoon dresses. Plain colors or figured.

Chambray	Cotton	Plain	32	$.12½–$.25	**Light weight cotton cloth; always woven with one color in warp, and white filling; white selvedge. School or house dresses.**
Cheese Cloth	Cotton	Plain	36	$ .08–$ .12	Loosely woven fabric of medium fine thread, used for dust cloths, patterns and covers.
Cheviot	Wool or worsted	Plain or twill	50–54	$1.00–$3.00	Coarse, heavy woolen cloth; suitable for suits, storm- or top-coats.
Chiffon	Silk	Plain	45	$ .75–$1.00	Thin, gauzy fabric for waists, sleeves, collars, etc.
Chiffon Cloth	Silk	Plain	45	$1.00–$1.50	Soft thin gauzy fabric, heavier in weight and more durable than the chiffon. Waists, etc.
China silk	Silk	Plain	32–36	$ .75–$1.25	Thin glossy silk, used for linings.
Chintz	Cotton	Plain	36	$ .25–$ .50	Fine medium heavy cotton stuff; usually figured; used for dresses, etc.
Corduroy	Cotton	Pile	27	$1.00–$2.00	Corded cotton fabric. Used for school suits, dresses, etc.
Corsica	Silk and cotton	Plain	36	$1.00–$1.50	Lining silk of fine grade.
Covert	Wool	Twill	50–54	$2.00–$4.00	Fine twilled material; wears like iron.
Crash	Linen	Plain	30–45	$1.00–$1.50	Coarse, heavy linen, good for skirts, suits, etc.
Cravennette	Wool	Twill	50–56	$2.00–$3.00	Light weight wool material; good school suits; can be rain-proofed.
Crêpe	Cotton Silk Wool	Plain	32–36 38–40	$ .18–$1.00 $1.50–$4.00 $1.00–	Crinkled surface. Used for undergarments, waists, dresses.
Crêpe de Chine	Silk	Plain	40–45	$1.50–$4.00	Semi-luster; crêpe surface. Dresses, blouses, and in light weight undergarments.
Crêpe Georgette	Silk	Plain	40	$1.50–$2.00	Blouses, sleeves, dresses, etc.
Crêpe Meteor	Silk	.....	40–45	$1.50–$4.00	Luster; smooth surface. Dresses, evening gowns.
Diagonal	Wool	Twill	45–56	$1.50	Cloth of heavy or medium heavy weight; suits, coats.
Dimity	Cotton	.....	32	$ .25–$ .35	Striped or cross-barred, plain or figured. Dresses, kimonos, waists.

STAPLE MATERIALS—Continued

Name	Fiber	Weave	Width	Price	Appearance and Use
			Inches		
Drill	Cotton	Twill	36	$ .15–$ .20	Twilled cotton cloth; middy blouses, school and play dresses, rompers.
Duck	Cotton	Plain	36	$12½–$. 20	Like sail-cloth; heavy; for skirts, sport suits, middy blouses, etc.
Eolienne	Raw silk warp, cotton or worsted filling	.....	27–50	$1.00	Lustrous surface, soft, but not clinging. Dresses, suits.
Eponge	Linen or linen and cotton	Plain	45	$1.00–$2.00	Rough surface, looks like wool. Dresses and suits; a 20 per cent. cotton mixture; is not crushable.
Faille	Silk	Cord	36	$1.50	Surface in light ridges; dresses, afternoon coats, trimmings.
Flannel	Wool or cotton and wool	Plain or twill	27–36	$ .55–$1.00	Weave like coarse cotton; soft and warm; petticoats, house jackets, dresses, shirts.
Flannelette	Cotton	Plain	27	$ .08–$ .15	
Foulard	Silk	Twill	27–40	$ .75–$1.50	Usually figured (flowers or conventional design). Summer dresses; good for utility; sheds dust.
Gabardine	Wool	Twill	50–54	$1.50–$3.75	Somewhat like whipcord, but soft. Suits, dresses; does not shine as quickly as serge; wears well.
Galatea	Cotton	Twill	32	$ .15–$ .20	Twilled cotton, somewhat like drill. Does not keep white as well. Middy blouses, school dresses.
Gauze	Silk	Gauze, leno	45	$4.00–$5.00	Open mesh. Dresses, curtains.
Gingham	Cotton	Plain	32	$ .25–$1.00	Plain weave; pattern produced by yarn dyed thread; also plain colors—dresses, rompers, etc.
Grenadine	Silk	Gauze	44	$1.50–$3.00	Open weave, sometimes figured. Dresses (requires silk slip); good wearing qualities.

Grosgrain	Silk	Plain	22	$1.50	Heavy, lustrous; shows rib or slight cord on surface. Dresses, wraps.
Habutai	Silk	Plain	32–36	$2.00–$3.00	Lustrous; close weave. Shirts.
Henrietta	Wool	Twill	38–45	$1.00–$2.00	Luster; soft to touch. Dresses.
Homespun	Wool	Plain	50–54	$1.50–$2.50	Coarse; heavy. Suits, separate skirts; good for hard service.
Hopsacking	Wool	Plain	50–54	$1.75–$2.00	Coarse, rough surface like bagging; suits, skirts.
Indian Head	Cotton	Plain	36–45	$ .15–$ .25	Coarse, heavy muslin. Skirts, dresses, rompers, middy blouses. Easily laundered and lasting wear.
India Silk	Silk	Plain	32–36	$ .75–$1.50	Plain, lustrous, thin. Used for summer utility dresses and waists.
Khaki	Cotton	Twill	36	$ .25	Dust colored, heavy cloth. Sport and outing suits, middy blouses, school dresses, knickers, etc. Genuine khaki launders well, wears indefinitely.
Linen: handkerchief, dress, butcher's	Linen	Plain	36–90	$ .25–$2.00	Lustrous; heavy, fine. Dresses, suits, rompers, blouses, interlinings.
Lawn	Cotton or linen	Plain	27–36	$ .10–$ .50	Sheer, stiff (with dressing). Plain and figured. Dresses, slips, aprons.
Longcloth	Cotton	Plain	36	$ .15–$ .30	Fine, soft to touch. Undergarments and infants' wear.
Madras	Cotton	Plain and satin	27–32	$ .25–$1.00	Usually striped; colored and white. Shirts, dresses.
Marquissette	Silk or cotton	Leno or gauze	45	$ .75–$1.25	Open weave. Dresses, waists.
Melton	Wool	Plain and twill	50–54	$2.00–$4.00	Thick, heavy, rough to touch. Coats.
Messaline	Silk	.....	36	$1.00–$1.50	Luster, light weight. Slips, petticoats, linings.
Mohair (see Brilliantine)	.....	.. ....	.....	.....	
Moire	Silk Wool	Cord	22–40 45	$1.50–$5.00 $2.00	Slight cord, watered surface. Dresses, coats, wraps, waists.

STAPLE MATERIALS—Continued

Name	Fiber	Weave	Width	Price	Appearance and Use
			Inches		
Muslin	Cotton	Plain or twilled	36	$ .15–$ .25	White or colored, fine or coarse; skirts, dresses, middy blouses.
Nainsook	Cotton	Plain	36–45	$ .20–$ .50	Fine, soft. Undergarments, infants' slips, and dresses.
Nun's veiling	Wool	Plain	36	$1.00–$2.00	Light weight, plain. Dresses, summer weight.
Organdie	Cotton	Plain	36–72	$ .75–$1.25	Sheer, with stiffness, which keeps it firm. Washable (some grades). Dresses, waists, collars and cuffs.
Panama	Wool	Plain	42–54	$1.00–$1.75	Medium heavy. Separate skirts, dresses.
Percale	Cotton	Plain	36	$.12½–$.25	Plain colors, stripes and figures. Skirts, dresses, waists.
Percaline	Cotton	Plain	36	$ .25–$ .35	Fine, soft, strong. Waist linings and foundation skirts.
Persian lawn	Cotton	Plain	32–36	$ .25–$ .50	Sheer and fine. Lingerie blouses, dresses, infants' dresses.
Pique	Cotton	Cord	27	$ .50–$1.00	Ribbed; white and colors. Separate skirts and dresses.
Pongée	Silk	Plain	27	$ .65–$1.50	Natural colors and dyed; more or less rough and harsh. Unlimited wear; spots with water but launders well. Waists, dresses, coats, petticoats.
Poplin	Cotton	Cord	27–32	$ .25	Ribbed; white and colors. Dresses, skirts, etc.
	Silk		45	$2.00–$4.00	
	Wool		45–50	$1.50–$3.00	
Prunella	Wool	Satin	48–52	$1.00–$2.00	Glossy surface, harsh. Skirts, dresses.
Rajah	Silk	Plain	36	$ .75–$1.50	Rougher than pongée; in colors. Dresses, coats.
Ratine	Cotton	Plain	36–45	$ .50–$1.50	Rough weave; heavy and light weight. Summer dresses and skirts.

Sateen	Cotton	Twill	36	$ .25–$ .50	Glossy, soft to touch. Lining for waists and skirts; petticoats.
Satin	Silk or silk and cotton	Satin	27–40	$1.00–$5.00	High gloss; soft; heavy and light. Dresses, coats, skirts.
Seersucker	Cotton	Plain	27–36	$ .25	Crinkled surface; with stripes. Petticoats, rompers, etc.
Serge	Wool, worsted, silk	Twill	48–58	$1.00–$3.00	Either hard or soft finish; shines easily; wears long time. Suits, skirts, dresses.
Shantung	Silk	Plain	36	$ .75–$1.50	
Shepherd's Plaid	Wool	Twill	48–54	$1.00–$3.00	Checked; in black, or colors and white. Skirts, suits, top-coats.
Swiss	Cotton	.....	32–45	$ .75–$2.00	Open weave, sheer, usually embroidered. Lingerie blouses and dresses.
Taffeta	Silk	Plain	32–40	$1.00–$4.00	Plain colors or changeable; soft qualities. Wears well if not adulterated. Lustrous. Coats, dresses, etc.
Tricot	Wool, cotton, silk	Twill	.....	$2.00–$3.00	Twill weave, fine. Men's and women's suits.
Tweed	Wool	Plain	50–54	$1.00–$2.50	Rough surface; long wear; presses well. Suits, skirts, sport, or travelling coats.
Velvet	Silk or silk and linen or cotton	Pile	18	$1.00–$10.00	Rich and deep in tone. Dresses, coats, hats.
Velveteen	Cotton	Pile	27–36	$1.00	Like velvet, not so rich; suits and dresses.
Venetian	Worsted or cotton warp and worsted filling	Twill	50–54	$1.50–$3.00	Like broadcloth; shows twill; coats, suits.
Voile	Worsted Cotton	Plain	38–45	$1.50 $ .25–$1.00	Open weave; firm in wool, very soft in cotton. Fancy suits in wool; separate skirts. Lingerie dresses and blouses in cotton.
Zibeline	Wool	Twill	.....	$2.00–$4.00	Loosely woven; glossy surface; long hairs on surface. Dresses and suits.

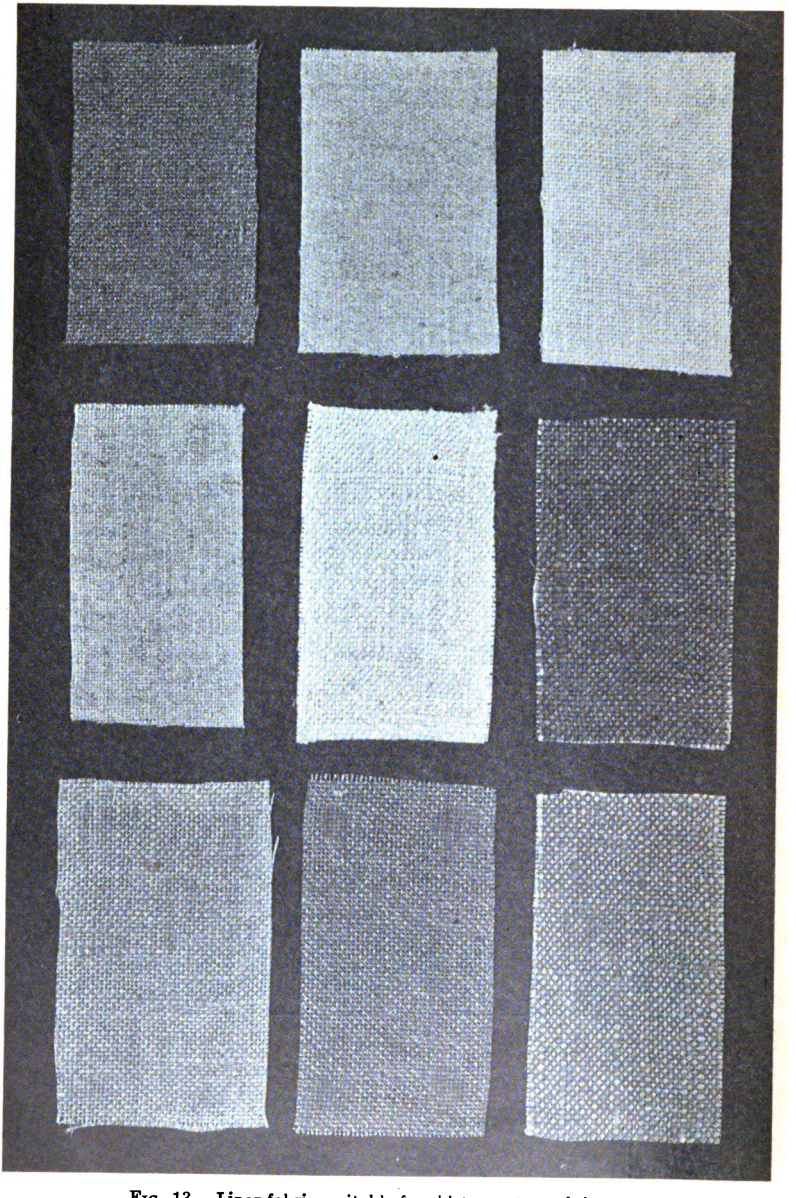

FIG. 13.—Linen fabrics suitable for skirts, coats, and dresses.

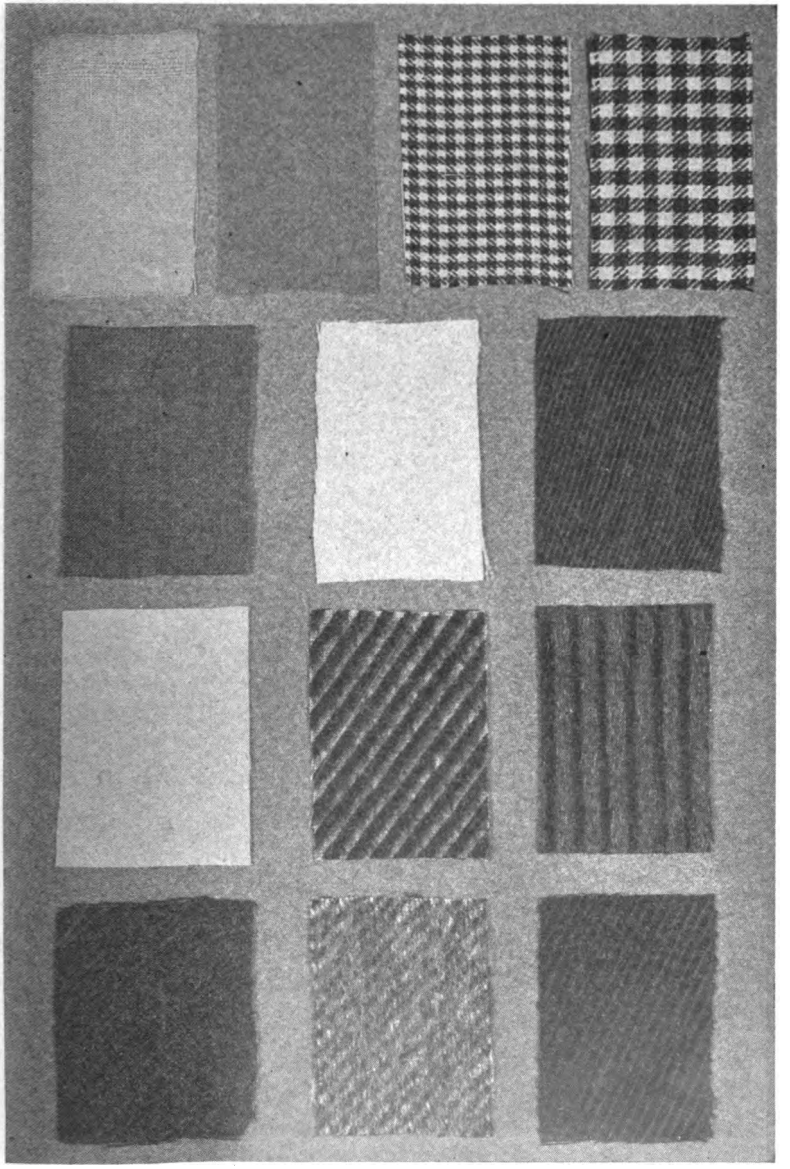

FIG. 14.—Wool fabrics suitable for skirts, dresses, and coats.

Upper row (left to right), challis, albatross, shepherd's checks.
Second row (left to right), brilliantine, serge, gabardine.
Third row (left to right), broadcloth, diagonal, and striped zibeline.
Lower row (left to right), cheviot (2) and covert cloth.

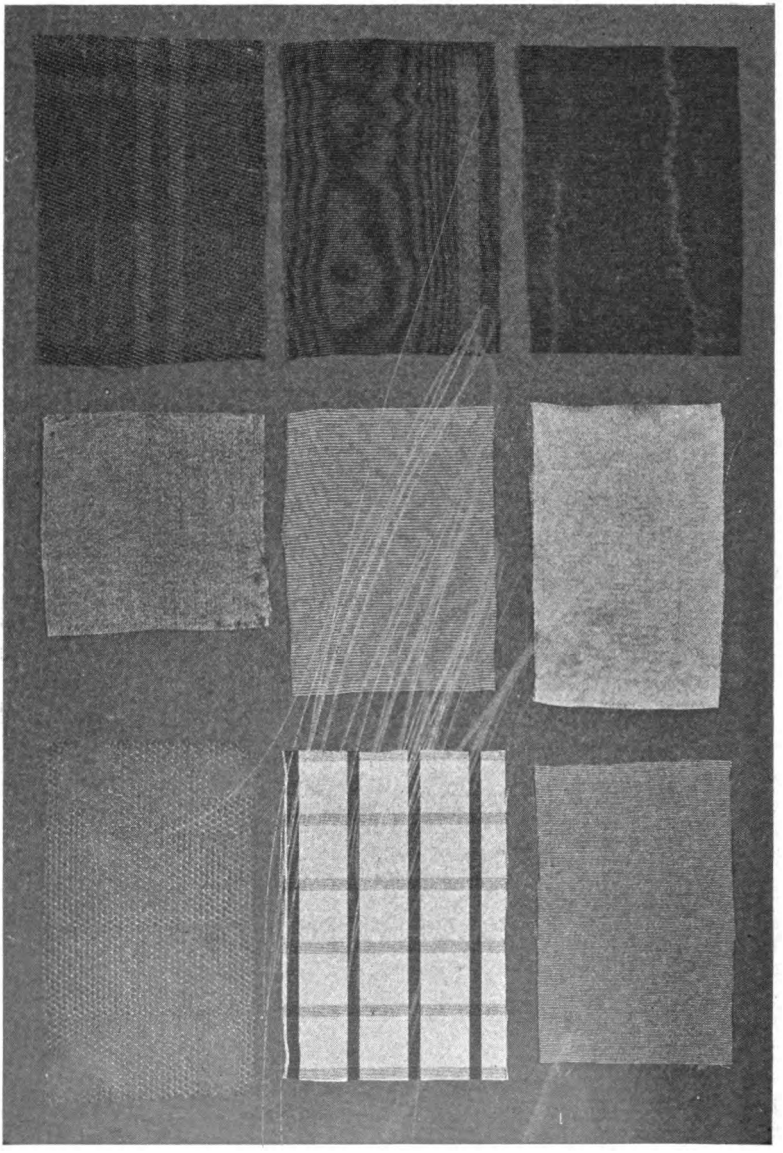

FIG. 15.—Silk fabrics suitable for dresses and wraps.

Upper row (left to right), silk serge, moiré (2).
Second row (left to right), chiffon velvet, silk poplin, and crêpe meteor.
Third row (left to right), silk net, plaid taffeta, faille.

Laces and Embroideries.—Following is a list of a few familiar laces and embroideries suitable for decoration of undergarments, lingerie blouses, dresses, etc. Prices of such have a wide range, therefore it is difficult to arrange a standard list. One can find a variety of attractive, durable edgings for very little outlay; Figs. 16, 17 and 18 show good patterns of several types of laces, and Figs. 19, 20 and 21 embroideries of several kinds. Both laces and embroideries should be chosen with regard to the kind of material which they are intended to decorate; to illustrate, very heavy lace on very light weight material will overweight the garment, which is contrary to good design.

Durability is a factor not to be overlooked. When buying laces, select those the thread of which runs *diagonally* from edge to edge, making the mesh interlock; there is a kind of lace, the thread of which only forms one-half of the mesh, the points being tied together with a weak, fine thread which does not show, but in a short time breaks down, and the lace becomes worthless.

In choosing embroideries, select those which have a background similar to the material to be used in the garment. Do not use heavy edgings on light weight materials. Embroideries are to be had with batiste, nainsook, Swiss, and soft-finished cambric backgrounds, if one wishes the heavy embroidery. Entre-deux can also be had in the materials mentioned above, and in voile also; this is very good for use on lingerie blouses made of voile. Hand-made embroideries are very expensive even in narrow edgings, but there are hand-finished embroideries, the edges of which are trimmed by hand, and which simulate the fine hand-embroideries and are less expensive.

Laces

Valenciennes, edge, insertion, and beading:						
French	$ .10	and	upwards	a	yard.	
German	.10	"	"	"	"	
Cluny	.15	"	"	"	"	
Torchon	.10	"	"	"	"	
Filet	.15	"	"	"	"	
Irish	.25	"	"	"	"	
Footing, plain; point d'esprit	.04	"	"	"	"	

Embroideries

Batiste	$ .25	"	"	"	"
Nainsook	.25	"	"	"	"
Swiss	.25	"	"	"	"
Soft-finished Cambric	.25	"	"	"	"
Embroidery beadings, same backgrounds	.08	"	"	"	"

FINDINGS

One should become familiar not only with the materials used in the construction of garments, but also with the numerous "findings" necessary for finishing edges, trimming, and fastening garments. The following list names those most often needed and gives approximate prices.

Fastenings

Buttons	Pearl: Two-hole	$ .10 and upwards a dozen.
	Pearl: Four-hole	.10 " " " "
	Pearl: Shank	.25 " " " "
	Pearl: Link	.25 " " " "
	Linen	.12 " " " "
	Crochet	.10 " " " "
Hooks and eyes	Swan Bill / Hump	Hooks and eyes $ .04–.10 a card.
Snap or ball-and-socket fasteners		$ .05 a card.
Belting	Cotton, ribbed	.08–.15 a yard.
	Silk, ribbed	.15 a yard.
	Cotton, twilled	.03–.05 a yard.
	Silk, twilled	.15 a yard.
	Percaline, featherbone	.12 "
	Non-elastic tape	.05 "
Tape	Linen, plain	.04 a piece.
	Cotton, twilled	.05 "
	Bobbin, twilled	.02 "
Bias seam binding	Lawn / Linen: White and Colors	.12–.15 a piece.
Prussian binding, twilled tape, silk warp, linen filling		.25 a piece.
Taffeta seam binding, taffeta ribbon, ½ inch–¾ inch white, colors, $0.20 a piece.		
Thread	Cotton	$ .05 a spool.
	Silk	.09 "
	Button-hole twist	.02 "
	Cotton for embroidery	.02–.05 a skein.
Braids	Middy, cotton	.03 a yard.
	Skirt: Worsted / Mercerized cotton / Cotton	.15 a piece.
	Soutache: Worsted / Silk / Cotton	.03 "
	Trimming braid: Silk / Worsted	.05 "
	Lace, cotton	.04 "
Collar stays	Singly or by Dozen	.01 " to .25 a dozen.
Waist bone	Featherbone	.22 a yard.
	Whalebone	.30 "

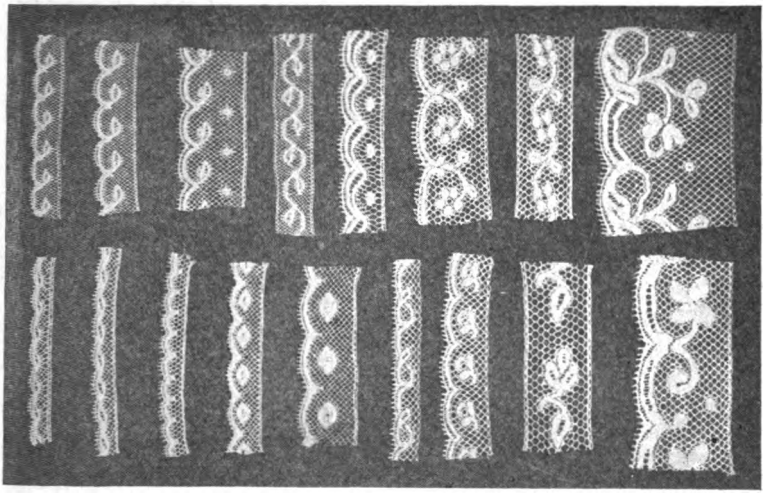

FIG. 16.—French and German Valenciennes, lace, machine-made, suitable for trimming garments, infants' wear, and lingerie dresses and blouses.

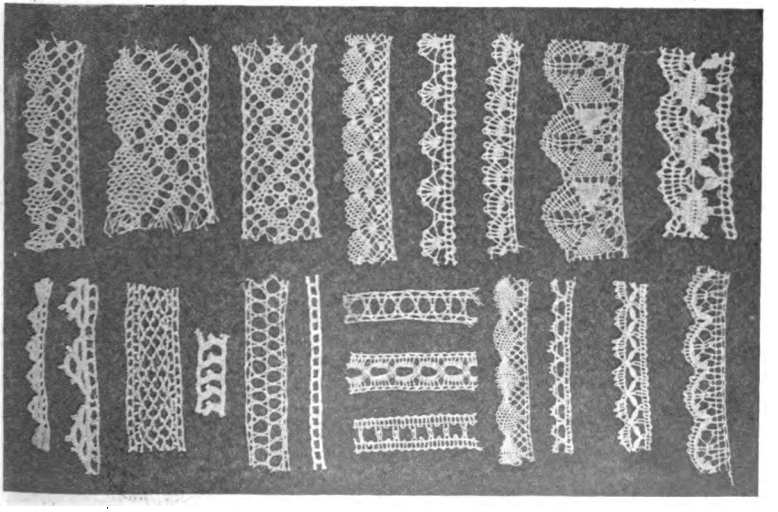

FIG. 17.—Cluny, torchon, and Irish laces and beadings, hand-and machine-made, suitable for undergarments and lingerie blouses.

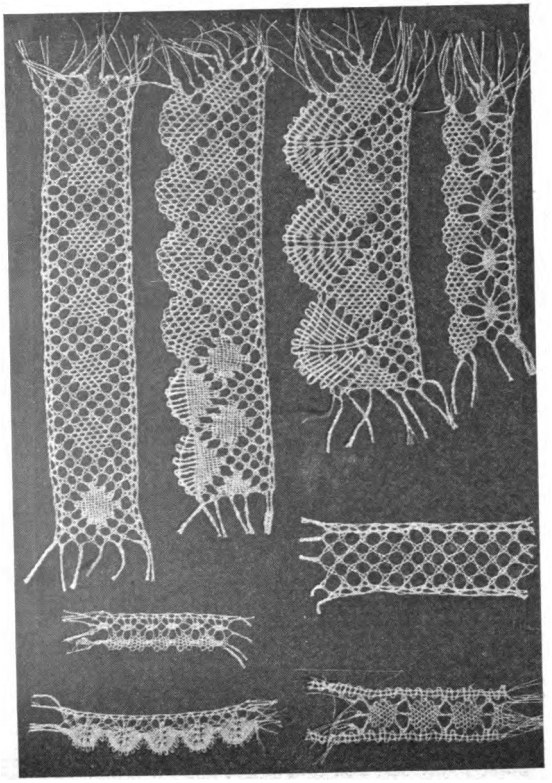

FIG. 18.—Hand-made (pillow) cluny lace.

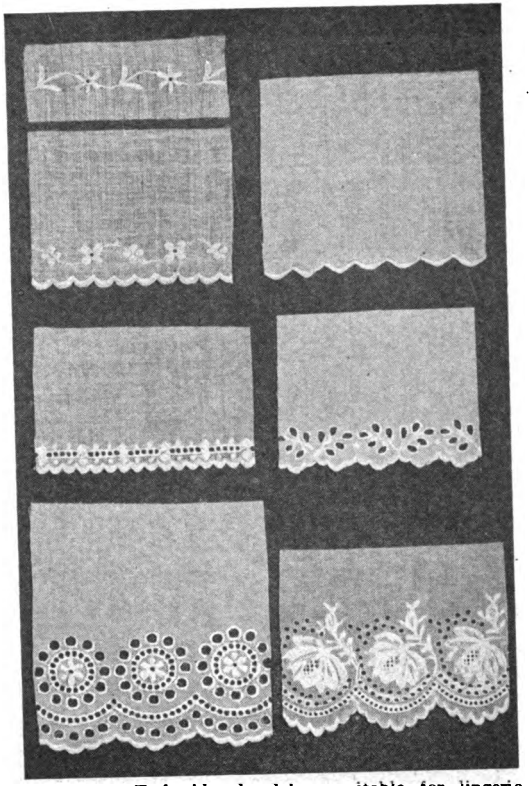

FIG. 19.—Embroidered edgings suitable for lingerie dresses and undergarments.

Upper row (left to right), hand-finished insertion and edging and hand embroidered edging.

Second row (left to right), nainsook and soft finished cambric edging.

Lower row, soft finished cambric edgings.

FIG. 20.—Embroidered edgings, suitable for lingerie dresess and undergarments.
Upper row (left to right), batiste and Swiss edging.
Second row (left to right), batiste and Swiss edging.
Lower row (left to right), batiste and voile edging.

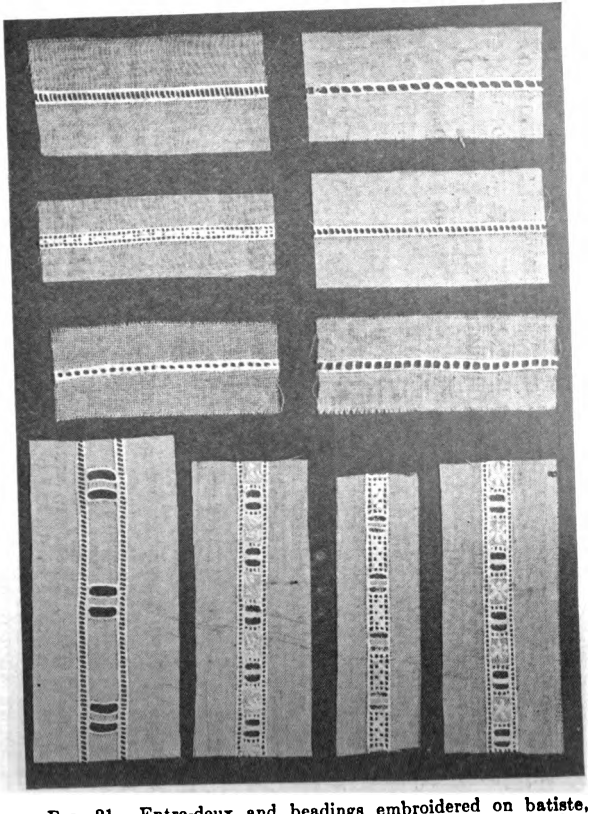

FIG. 21.—Entre-deux and beadings embroidered on batiste, Swiss, nainsook, soft finished cambric and voile, suitable for undergarments, infants' clothing, lingerie blouses, and dresses.

LABOR IN TEXTILE INDUSTRIES

It is highly important that the purchaser should know of conditions which attend the laborers engaged in the preparation of fibers, the manufacture of fabrics, and wearing apparel, so that they may aid the growing endeavor to better these conditions through investigation, the enactment and enforcement of laws, and the education of the individual buyer.

With the passing of the clothing industries from the home, women have been forced to follow these into the factory, and not only the women, but children, have also been forced to engage in factory labor, an evil outgrowth of which has been the overcrowding and huddling of the many, in badly lighted, poorly ventilated tenement houses, where long hours, little pay and ill health are the common lot of all. Some of the evils are these: (1) crowded factories; (2) unprotected machinery, causing accidents; (3) buildings, mere fire-traps; (4) bad sanitary conditions; (5) long hours; (6) child labor. Eager to cheapen the cost of production, manufacturers have also given out work from the factories to be done in the homes, and this without regard to the conditions under which the work is carried on. Many of the industries are carried on in such ways as follow,—people that are old and feeble, others sick and distressed, and little children, mere babies, are at work in dingy rooms, ill-fed, dull, and hopeless. Such conditions exist, but much has been done to correct them; legislation has followed on the footsteps of investigation, as pleas for better conditions have been made. Some states have passed laws regulating the number of hours per day women may work in the factories. School attendance has been made compulsory; children are not allowed to work in stores or factories until fourteen years of age. On the other hand, factory owners and heads of department stores have been led to provide good lunch and rest rooms, also club rooms, seats behind the counters for employees, and generally good sanitary conditions, throughout their establishments. Much has been done in the direction of this betterment through the efforts of the National Consumers' League, an organization of women whose endeavor has been toward the improvement of the working and living conditions of women's garment makers especially. They have made investigations, secured legislation and now grant to the manufacturer who meets the requirements of the League the right to use the label of the League, which assures the buyer that the articles purchased have been made under healthful conditions, in factories conforming to

child labor and other laws. This League publishes a White List containing the names of those manufacturers who conform to law. It becomes, then, the duty of the consumer to inquire whether goods bearing the Consumers' League label are available in her community, because if her demand becomes one of many, by law of economics, the supply must be made to meet the demand; then labor conditions will be more generally reformed.

SUGGESTIVE QUESTIONS

1. With what facts should a girl become familiar in order to learn how to buy wisely and economically?
2. Name the four principal fibers of which cloths are made. Tell some of the qualities which make them useful for manufacturing purposes. Which fiber is the most costly to manufacture? Why?
3. Tell briefly the history of growth, preparation and manufacture of cotton.
4. Name the most familiar weaves; describe briefly the difference between plain and twill weaves.
5. How can weave, or color design affect the cost of a garment?
6. *a.* List six different fabrics used in your own clothing. *b.* Name six used in men's clothing. *c.* State widths and costs.

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PART II

CLOTHING DESIGN. COLOR. PATTERN MAKING. USE OF PATTERNS. SIMPLE PROBLEMS IN CLOTHING DESIGN.

"The study of the relation of line and form, color and composition in dress, opens to the learner delightful possibilities of enjoyable achievements which are beyond all comparison with an unreasoning imitation of prevailing fashion."

CHAPTER III

PRINCIPLES OF CLOTHING DESIGN

Clothing Our Bodies.—Recall for a moment some of the impressions received when looking at pictures. Have you never turned from one with a sense of discord and confusion, and from another, with a feeling of harmony and rest? In the first instance, perhaps, the picture presented a confusion of line, disorderly arrangement, or inharmonious use of color, but in the second, color, line and arrangement appealed to your sense, as a harmonious whole, hence your feeling of pleasure. Some one has said, "One need not handle brush and paint to give expression to artistic feeling." There is significance in this statement when applied to the mode of clothing our bodies. We are constantly making pictures of ourselves, which either do, or do not, react in a felicitous manner upon ourselves and others.

Each of us has a standard by which she judges of the beauty and harmony of the clothing she wears. Whether or not her standard measures up to an artistic ideal, depends upon her interest in, or indifference to beauty in dress; upon her appreciation of those things which make for harmony in clothing,—color, form, line, and texture; or upon her ignorance of the principles of art as applied to clothing, or her complacency regarding such matters. As principles of design are understood there will result more correct modes of clothing. To point out some of these principles, and suggest methods of application, with suggestions for further study, is the most that can be done in the space available in this book.

We should not think of our clothing merely as a covering for the body, to be constructed upon lines dictated by some passing whim of fashion, but study rather to suit the covering to the form beneath, and that not alone in line, but color and texture as well. The creative genius of the great designers may not be ours, but to none is denied the power of expression, and that in terms of one's highest appreciation. We can approach the same artistic ideals, become familiar with the same principles of design, study the same artistic forms in sculpture and painting, and the modes of draping these

forms which have found favor in the successive periods of the world's history. Appreciation should then give expression to better ideals, both for ourselves and others. In clothing design, we cannot dissociate color, form, line, and texture. Color will be treated more fully in a later chapter. We shall at present confine ourselves to the consideration of form, line, and texture.

FORM

Contour.—The human form is, from the artist's point of view, the most beautiful form. An artistic conception of an ideal womanly form is a figure seven and one-half or eight heads high (the head from just below the crown to the chin being the unit of measurement), with long neck, shoulders that slope slightly, a high chest and straight back, an easy carriage and grace of movement. The contour of such a form is made up of gently rounding, reversed curves, which melt into each other, forming beautiful lines. The slight inward curve at the waist, called the Greek curve and found in examples of Greek sculpture, is considered the most beautiful line of the body. There are no straight lines to be found in the contour.

Structure.—It is not sufficient for the purpose of design, that form be studied in contour alone. Just as the builder understands the foundation of the building in relation to its superstructure, so must the designer understand the structure of the form in order to drape it in accord with the principles of design. The artist recognizes a structural division of the form into two great masses, the torso or trunk, and limbs. The structural parts of the body, the points of support and articulation, must be kept in mind: the points of support are the shoulders and hips; the points of articulation are the neck, elbows, wrists, knees, and ankles.

Line in Relation to Structure.—No lines in contradiction to, or at variance with, the contour of the form, should appear in well-ordered clothing design. All divisions of the garment, whether by seam or decoration, should be made in relation to structural parts and areas. Parts of garments should be supported at structural points. Decoration should be placed at points of support or articulation.

Line in Relation to Design.—The use of a line is to direct the attention to some point of interest. In all good designs are found two kinds of line, straight and curved. The interchange of

these, or predominance of one over the other, depends upon the feeling of the designer. Straight lines are severe; they lend dignity and strength; curved lines express life and joy, and give variety in design; the finest curves, however, approach straight lines. Unity is expressed in the flow of lines growing out of each other; in lines of radiation, in an arrangement of parallel lines which emphasize each other; and by repetition of the lines of contour in other parts of the design. The use of horizontal and vertical lines in combination rivets the attention and changes the appeal to the artistic sense. The whole problem of design, then, is to make a harmonious arrangement of lines and shapes (or masses) in accordance with the principles of rhythmic unity, variety, and balance.

Texture affects design. Treatment of line that would render one fabric charming, would utterly fail with another. Soft, pliable stuffs are a joy to the designer because they lend themselves to such varied treatment, while stiff, harsh fabrics necessitate severity of line. Dull or lustrous surfaces affect design inasmuch as they absorb or reflect light. Weave in fabric, whether fine or coarse, plain or twilled; and pattern in weave, or pattern produced by color, greatly affect design. Plain weaves place almost no limitations, but a design planned for plain material and used for twilled material, may produce a displeasing effect by bringing the lines of the twill entirely at variance. Pattern in weave affects the division of areas, and limits decoration. Pattern produced by the use of color in printing, or the interlacing of vari-colored threads (as in figures, stripes, and plaids), affects design by reason of the size, the position, the up and down, or the right and left placing of figure or line, and requires careful manipulation in order to avoid pitfalls of error (Figs. 6, 7 and 8).

Occasion influences design. Garments should reflect the spirit of the occasion and the wearer. Free use of broken lines and curves, repetition of pattern in design, and oft-repeated decoration bespeak festive occasions and joyous emotions; severity of lines, restraint of curves and absence of decoration may suggest formal occasion and serious emotions.

Feeling for texture and line is developed through the study of textiles, the free and untrammelled use of fabrics and experimentation with them in draping, and through the study of the best forms in sculpture and painting. Comparative study of historic

costume opens up a world of inspiration and suggestion for the creation of individual modes. One may not have immediate access to museum or library, but there are always to be had excellent prints of both ancient and modern sculpture, painting, and historic costume.

Individuality in Clothing.—Someone has said that "The delicate human eye, with common sense behind it, is the best dress critic a woman can have." With an accepted ideal of form, and principles of design in mind, one may set about establishing correct modes of clothing for oneself. A person should first of all study, courageously and critically, her silhouette in the reflection of a triple mirror; she must note the strong and weak lines in her contour, her heighth and breadth, the proportion and balance of the masses, and her coloring. Then she may choose her materials and build up her design. She is not limited as to choice of shapes, or decoration. All the galleries of the world are open to her. Her garments should carry some note of the wearer's own individuality, something which enhances the charm of the wearer, but does not call attention to the garment itself.

It may be helpful to become familiar with proportionate divisions of the normal figure, which are as follows:

Figure .....7½–8 heads high;
1st head .....Just below crown of head to chin;
2d and 3d heads.....Chin to waist line;
4th head .....Waist line to end of torso;
5th head .....Torso to half way down thigh;
6th head .....Half way down thigh to center of knee;
7th head .....Center of knee to near ankle;
7½–8th heads .....Near ankle to foot.

Proportionate Lengths

Inside instep (center of foot) to top of knee-cap, equals center of knee-cap to hip bone.

End of torso to end of breast bone, equals from below the crown of head to shoulder, or one-sixth of body.

Arm (wrist to elbow), equals 1½ heads.

Neck, equals ½ head.

A general idea of these proportions may aid in judging one's own limitations of form.

The following suggestions as to choice of fabric and design for

diametrically opposite types of figure may also be found helpful. Intermediate types are not so difficult to clothe. Tall women, if slender, appear taller than they are, while short women, if stout, appear shorter than they are. Our endeavor then must be to counteract one optical illusion by the substitution of another. The tall woman should adopt some mode that will increase her breadth, and so appear to decrease her height; likewise the short woman must adopt lines that seem to add to her height and decrease her breadth. Slender figures need full skirts made of materials which seem to give roundness to the figure. Loose, full draperies, flounces and horizontal trimmings suggest breadth. If the figure is very tall, do not accentuate height by the use of many long lines; introduce horizontal lines. If the length of the body is out of proportion to the length of the legs, *i.e.*, too short, lower the waist line of the gown so that this defect is concealed; if the reverse, raise the waist line in the gown to make a good design. Full, loose blouses are becoming to tall, slender figures. Fluffiness, rather than severity, should be sought after. The displeasing effect of very sloping shoulders may be overcome by horizontal lines brought high upon the waist and extending across the shoulder (Fig. 27, A.D. 1854). Plaids of striking color and broken up into large areas are admissible only on slender figures.

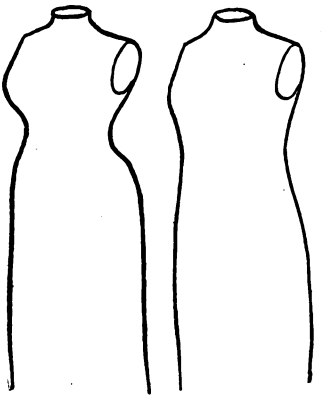


FIG. 22.—Silhouettes of stout figure.

It is more difficult to design clothing for the short, stout woman; she needs always to make every effort to suggest height and slenderness. Keeping in mind the fact that the curves which more nearly approach straight lines are the more beautiful, she should strive to achieve the silhouette to the right of Fig. 22, and avoid that to the left. Her garments should be of loose, easy fit, admitting freedom in breathing and ease of movement. Unbroken lines from shoulder to foot add height. When desirable to have garment in two parts, let the lower part run well up under the upper, so that it may appear to be supported by the shoulders. Diagonal lines from shoulder to waist, thence carried throughout the

length of the skirt in a diagonal tuck, or in deep straight plaits in front, suggest height. Appearance of slenderness may be achieved in the back by having the waist of loose fit, hanging in straight line from shoulder-blade to below the waist. Great care must be exercised in designing skirts. For the stout figure full circular skirts give too much suggestion of roundness, but the introduction of a rather straight panel effect in the front, of broad well-pressed forward turning plaits, and keeping the flare of the skirt back of the full part of the hips and below the fullest part of the back, make the circular skirt possible to the stout figure, if the design of the upper garment be well chosen. If the skirt design be broken up into gores, the proportionate width of panels and gores must be carefully observed. A narrow front panel on a stout figure accentuates its width. Sometimes seams over the hips break up the design too much, especially if there be a pattern in the material. The short, stout woman must avoid all true horizontal lines in her design. Yokes, deep turnover collars with square corners, girdles that circle the waist in horizontal fashion, or confine the material closely, and bands of trimming at the foot of a skirt (especially when of contrasting color or texture), decrease the height of the figure as much as their depth. The fabrics chosen should be such that neither bulk, weave, finish, color, nor design, will add to her proportions. Thick, loosely woven cloths, those that are rigid in weave, and those with high gloss, are to be avoided. Soft clinging, low-luster fabrics tend to reduce the proportions. Figured materials are apt to increase size, unless in self-tones. Stripes should be chosen most carefully as to color and balance. Plaids are inadmissible for the stout figure.

All decoration should have some function, or at least appear to, even if it be only for the sake of variety in design, *i.e.,* a row of buttons on the front of a gown, which may or may not be used for fastening, but without which the whole mass would be unattractive. Neck lines should conform to the contour of the face and mode of dressing the hair. All parts of garments should be supported at structural points; to illustrate, sleeves should be set so as to appear to be supported by the shoulder (a principle often sadly set aside).

The principles of design may be very finely executed in the selection and construction of undergarments. The fabric of which the garment is to be made should be of the first consideration in planning the design; then the use to which it must be put, that a

simple treatment or one with more decorative element may be carried out. The cut or line of the garment is of the utmost importance, because it bears close relation to the outer garments. As few seams as are compatible with good fitting need be used in its construction. No lines, whether in the body of the garment itself, or introduced in the decoration, should contradict the lines of a sheer outer garment. Fastenings should be carefully planned, and if colored ribbons are desired only those of the most delicate tints should be used. The whole should bespeak simplicity and orderliness of arrangement.

PRINCIPLES OF DESIGN ILLUSTRATED BY HISTORIC COSTUMES

The two-fold aim of clothing design is to express the beauty of the human form and make the garment a work of art, independently of the form on which it is worn. The first ideal is based on the structure of the body for the lines of the design, and the articulation of forms for the subordinate parts. The Greek costume shown in Fig. 23 illustrates this. The two large divisions of the garment cover the torso and the limbs and hang from the natural supports, the shoulder and the hips. The great charm of the Greek drapery is in its subtle suggestion of the contours of the body. Ancient Japanese art furnishes examples of design on its own account as the aim of the costume. Much rhythmic beauty of line and mass pattern is found in the old Japanese print (see frontispiece). It has an exquisite evolution of flowing lines and subtle variety in the relation of the masses. These two illustrations make clear the two ideals which may inspire a design. We believe the first offers a greater possibility for beauty in dress, but we ought to be able to recognize good design from the other angle.

Lines may be said to be only the edges of masses. Composition should have both straight and curved lines, the former giving unity, the latter variety. Fig. 24, the archaic Greek dress, shows an interesting combination of straight and curved lines. Straight lines convey a feeling of power, dignity, stability, calmness, nobility. Curves are the life and joy of an arrangement. Restrained curves are always beautiful; curves may be used with freedom on clothing to be worn on occasions of gaiety. Simplicity in masses is an element of good design. All decorative detail must be kept subordinate, and should be consistent in feeling with the idea of the whole.

In the outlines of the costumes, in Figs. 25, 26, and 27, the point of view of the application of clothing design to the human form is

Courtesy Metropolitan Museum of Art, New York City

FIG. 23.—Greek costume. FIG. 24.—Archaic Greek costume.

found in all the designs from the earliest time to about the sixteenth century. Then there was adopted a decorative structural contour (1500–1700 A.D., Fig. 26) which lasted until the early 1800's, when the classical Empire became the fashion. After this there was a return to the preceding type, which held its own up to about 1870, when there was a change, and a long period of inadequate attempts

toward a silhouette ensued, 1870–1900. Within the last few years we achieved an approach to a contour of rational beauty, but this may be short-lived for, according to present commercial standards, fashion must be ever changing. In the clothing of the woman of the Bronze Age (Fig. 25), we find simple basic elements of structure, with consistent ornaments worn at natural articulations. The simple lines of the garment are combined with a strong, simple, decorative detail. The Egyptian costume in Fig. 25, in a more elaborate way, repeats the structure of the body, and shows unity of line, while variety is given in the cape-like arrangement and the lines of the girdle. How many centuries has the Greek drapery held first place in the realm of beauty! In the Greek costumes (Figs. 23 and 25), the lines perfectly echo the grace of the body, while simplicity predominates in the straight lines, giving a sense of nobility. The costume of 1000, Fig. 25, is typical of several centuries, for fashions did not change in hundreds of years then as they do in a few weeks to-day. The general contour, which has an obvious relation to the body, is good, and the design depends upon the long simple lines to give it dignity. The inner sleeve and the girdle furnish the variety. The costume of 1100, Fig. 25, does not differ structurally from that of 1000 except in the sleeves. The beautiful calm lines of the mantle add to the beauty of the whole. The structural outline of the year 1240 is much the same as that of 1339 (see Fig. 25), but there is a new element in the design, the chasuble or jacket effect conforms to the line of the torso and the curves give variety. The stately gown of 1339, Fig. 25, introduced more features of design, in contrast of line in a horizontal support of the mantle and a rhythmic movement in the curves. Unity is emphasized by the long mass of the front and the outline of the mantle. Fig. 25, 1370, shows a beautiful feeling for structural form and more imagination in the decorative detail. The shape of the neck and the bottom of the overgarment repeat each other, while the design on the hips lends variety. In 1440, Fig. 26, a new structural mass is seen—the division at the bust line, the horizontal line at the knees, repeated at the belt, is good, while the pointed waist is echoed in the tall henin. The example of 1500, Fig. 26, belongs to the class of costume that has an artificial or decorative structural basis. The upper part follows the body, but the skirt has no relation to human form. There is unity in the character of the masses of the sleeves and the skirt and collar, with the point of the

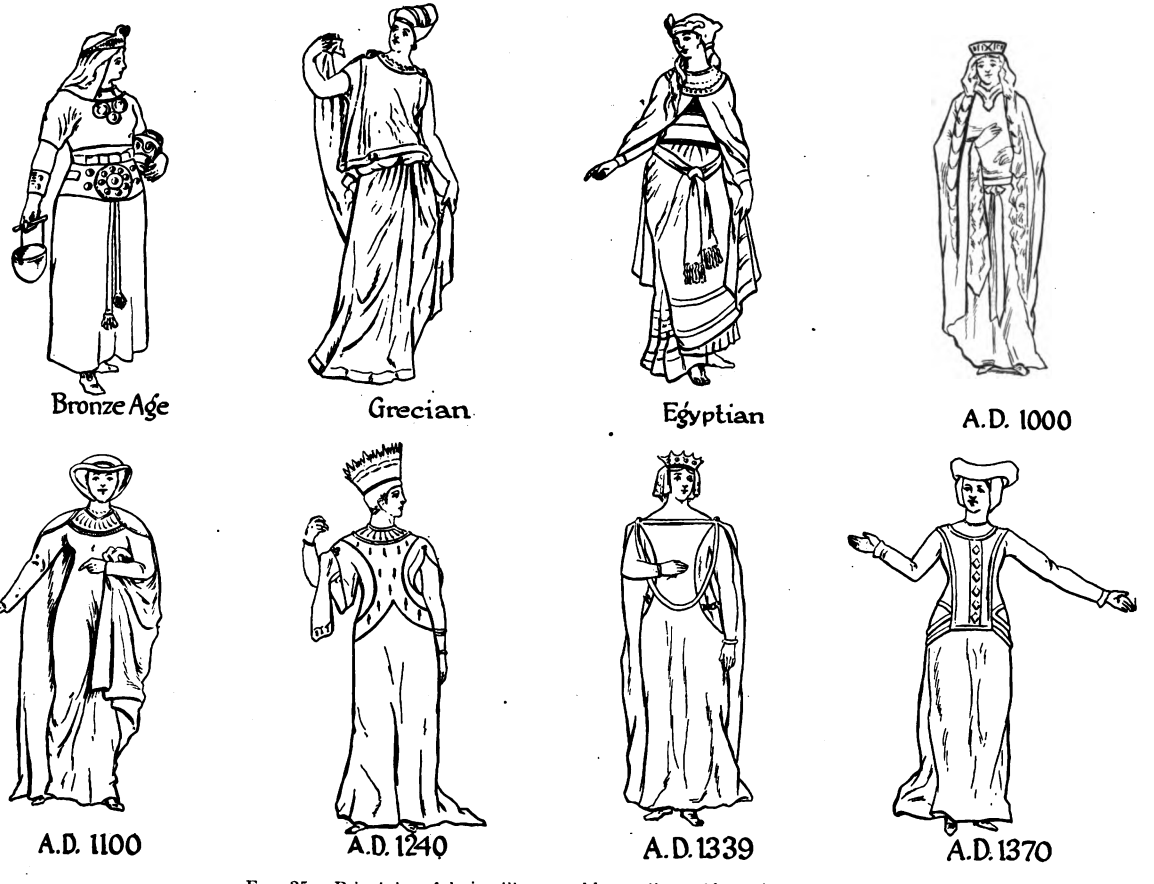
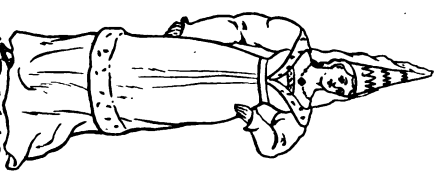


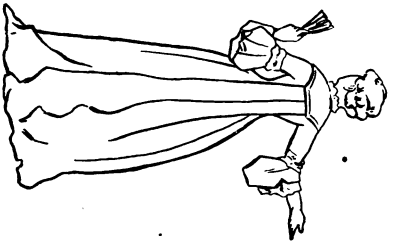
FIG. 25.—Principles of design illustrated by outlines of historic costumes.

A.D. 1700

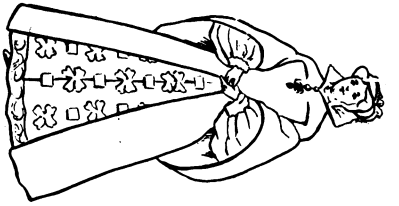
A.D. 1440



A.D. 1700

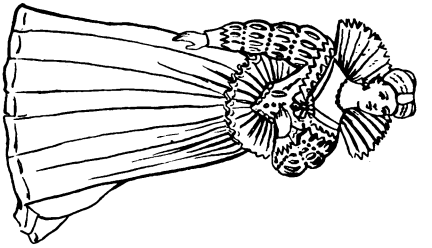


A.D. 1500

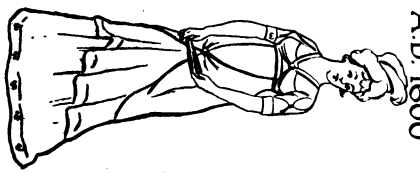


A.D. 1700

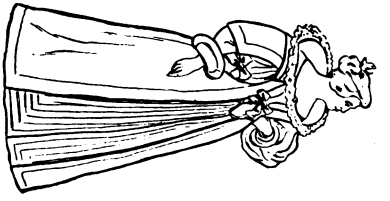
A.D. 1600



A.D. 1800



A.D. 1600



bodice. The jewelled ornament carries the eye to the face of the wearer. Fig. 26, 1600, shows the farthingale, or wheel, effect. Here the result is almost pure design. The big masses are harmonious, and are decorated by the radiating lines of the skirt, farthingale, and collar. Unity is established by the center point of the bodice. The decorative treatment of the sleeves and the bodice is in harmony with the whole. The shoulders and face appear as a center of interest. The second costume (1600) is not quite so varied but has greater simplicity. The long lines of the front give dignity. Note how the curves seem to grow out of each other. Fig. 26, 1700, is a good example of radial unity and line, which conforms to the general contour, with variety in the decorative details. The second costume, 1700, has a structural form, the parts of which harmonize, also the sleeve with the body of the garment. The long lines at the back are very beautiful. The third costume (1700), Fig. 26, is a good design in a period of exaggeration. The general contour is artificial, but the smaller parts are all in keeping, from the round neck to the ruffled scallops of the skirt. The lines of the back seem to suggest the form slightly. The Empire costume, Fig. 26, of the first quarter of 1800, changes again the form of the big masses. The smaller parts have a charming relationship of unity and variety, the long lines cling and suggest the body. The costume of 1831, in Fig. 27, is a reversion to the artificial silhouette. In the subordinate parts we see unity in the shapes of the masses. The wrap worn in 1846, Fig. 27, has a pleasing design in the rhythm of the curves. Fig. 27, 1854, is an excellent example of rhythmic arrangement by the repetition of the smaller parts. Its variety of line is consistent with the occasion for which the dress was designed. Fig. 27, 1866, shows unity in the big masses and radial lines. The costume of 1879, Fig. 27, is an attempt to return to the natural silhouette, but what a failure! The garment is an example of very poor design, without unity in line or mass, and much unrelated in variety. Fig. 27, 1887, has a perfectly arbitrary silhouette, and is without even decorative unity. Fig. 27, 1900, is an improvement over 1887, but is still not successful. The lines have a certain uniformity of character that are not beautiful. In the costume of 1909, Fig. 27, there is a good structural feeling in the general form and in the parts; through unity, variety, and balance, it approaches beauty.

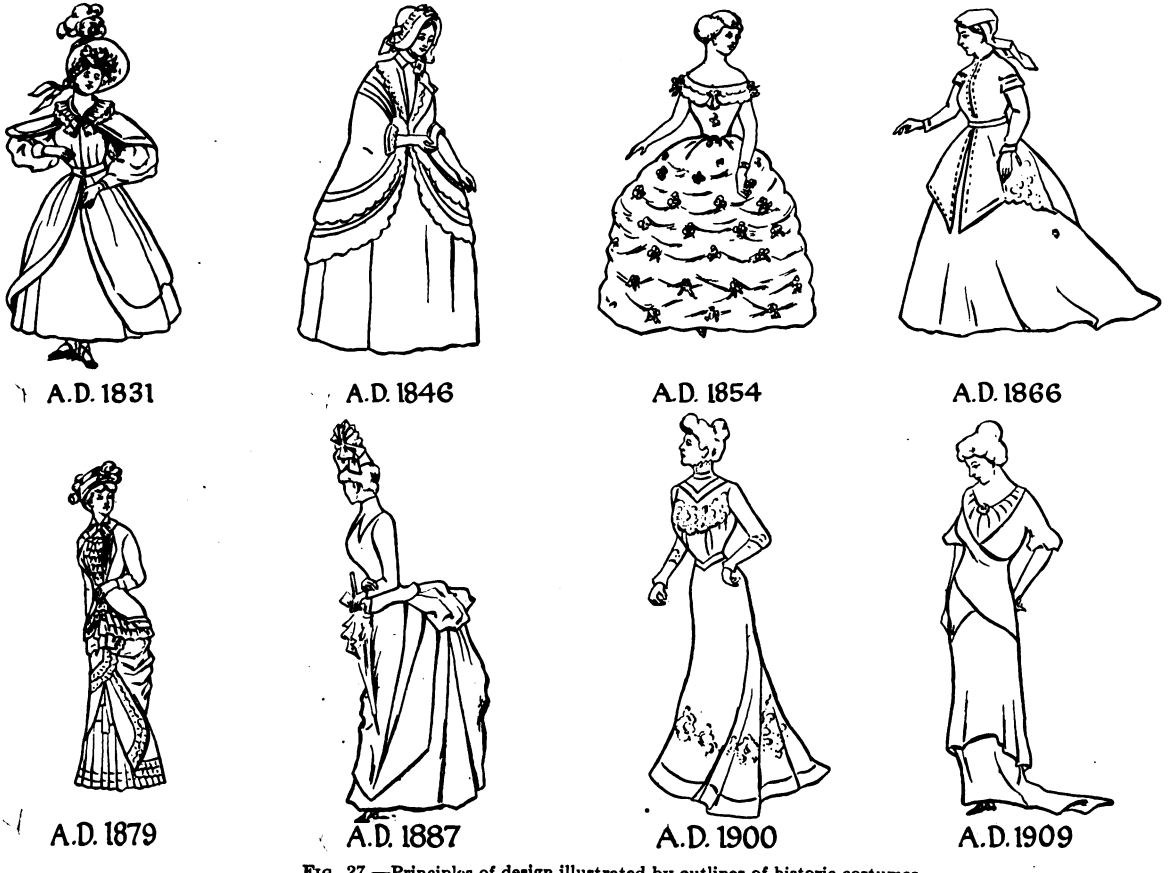


FIG. 27.—Principles of design illustrated by outlines of historic costumes.

SUGGESTIVE QUESTIONS

1. What is it that is important to study in order to learn how to clothe ourselves well?
2. What do you understand by (1) form, (2) line, (3) texture?
3. What relation should design bear to physical structure? Name several other things which affect design.
4. Choose two figures from the groups in Figs. 26, 27, and 28, that are pleasing to you and tell why they are pleasing to you and wherein they are examples of good design.

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CHAPTER IV

COLOR

THROUGH color, beauty in clothing becomes as fundamental an expression of the art impulse as painting, music, poetry or the dance. Color is the first thing which attracts or repels in a costume. It makes or unmakes the wearer more than any other element of her attire.

The sensation of color is universal, since it is derived immediately from our sense of sight; but full enjoyment of color as beauty depends upon the taste of the observer, the ability to discriminate, judge and understand the higher forms of achievement in its use, and this appreciation is the result of the training and exercise of the faculties involved.

There are a few people naturally endowed with a fine instinct for color—these we need not consider—but, for the majority who are guided by vague and uncertain feelings, we realize more and more that color should be made as definite a study as the art of music. Though, to the artist, color is the music of light and is often associated with music, a theory of color should be based upon qualities quite distinct from musical theory. At present, even the terms used popularly to convey color ideas are confusing and inadequate. John Addington Symonds has well expressed this in his little essay "In the Key of Blue." He says: "The nomenclature of color in literature has always puzzled me. It is easy to talk of green, blue, yellow, red. But when we seek to distinguish the tints of these hues, we are practically left to suggestions founded upon metaphor and analogy. We select some object in nature which possesses the particular quality we wish to indicate and we talk of grass-green, olive-green, emerald-green; of sapphire, forget-me-not, turquoise, sky-blue, or else we use the names of substances from which the pigments are compounded; as yellow-ochre, burnt-sienna, lamp-black, madder, cinnabar, or to indicate very subtle gradations, the jargon of commerce supplies us with terms like mauve, magenta, peacock, Prussian-blue, crushed strawberry, or Venetian red. The most precise terms often fail. What the writer wants would be a variety of broad terms to express the species, tints of each genus

(hue). In such terms some of the colors are richer than others. Green, I think, is poorest of all; after verdant, it has to be contended with compounds of itself, like pea-green and those cited above. Blue fares better, with its azure, cerulean, celestial, amethystine. Yellow is still more fortunate, rejoicing in golden saffron, orange, flaxen, tawny blonde. Red stands at the head of the list, possessing a copious vocabulary of ruddy, rosy, russet, crimson, scarlet, pink, sanguine, mulberry, carnation, blushing. It will be noticed that all these words denominating tints are eventually derived from substances which have been accepted in common parlance."

This quotation shows both the poverty of ordinary language in describing color and especially the inexactness of terms which makes uncertain the meaning intended, since a term based on analogy, "sky-blue" for example, means one thing in Italy and another thing in New York. The need of a more accurate color terminology is obvious, for while a fanciful association of ideas is pleasing, more definite terms are necessary in order to convey clear mental images of color.

Color Theory.—Where there is light there is color. Color is refracted light, that is, light broken up into its component parts. Every ray of light is composed of a group of perfectly balanced color waves or vibrations, which are conveyed through the eye to the brain as color sensations. This may be demonstrated by letting a ray of sunlight pass through a glass prism and fall on a white surface; the result is a band of prismatic colors, blending almost imperceptibly into each other—forming a rainbow. This is also called the spectrum, the principal colors of which are red, yellow, green, blue and purple, with their intermediate gradations, in the order given. The sequence of the colors of the spectrum suggests a circle (Fig. 28). By using a second prism placed in a position to catch the refracted rays of light from the first prism the spectral colors will revert to white light. This is nature's clue to color study.

Fundamental or primary color sensations of the spectrum are green, red and purple. The term "primary color" (as distinguished from the mental "color sensation") is often used to designate the three principal pigments, red, yellow and blue.

Color Qualities.—By comparing the colors in the spectrum we find that they differ in three ways. (Study a good prismatic color chart or a prism.)

1. *Hue.*—The name of the color. The quality which distinguishes red, yellow, blue, etc., from each other, irrespective of other differences. The hue of any reddish color is "red," and its redness is its *hue* quality; so, the hue of blue distinguishes all blue colors. This is a difference of warmth and coolness and red and yellow are called warm colors and blue a cold color.

2. *Value.*—The quality which distinguishes the relative amount of white and black in a color, irrespective of other differences. This is a difference of light and dark.

3. *Chroma.*—The quality which distinguishes the degree of intensity and brilliancy of a color, as compared with grayness. This is a difference of strength and weakness.

Pigments. — Pigments are any material means used to give rise to color sensations, such as paints, dyes, inks, etc. All pigments are more or less chemically impure, and therefore cannot perfectly represent spectral color. If tested by combining with each other the best pigments in spectral colors, the result will be gray and not white (compare with the experiment of the prisms). Material color is dependent upon the reflecting and absorbing qualities of the surface on which the rays of light fall.

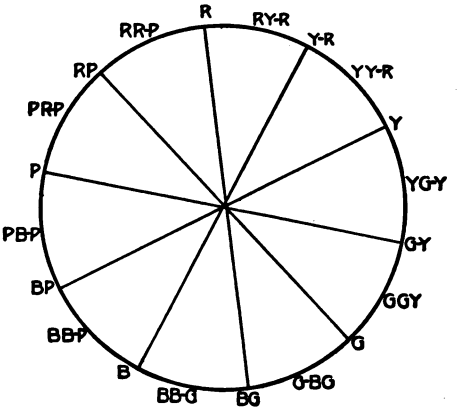


FIG. 28.—Color gradations.

Principal or "primary" pigments are red, yellow and blue. These colors cannot be obtained by the admixture of any other color pigments; but by various combinations with one another they produce all the other hues.

Secondary color pigments are orange, green and violet. These are hues made by mixing two principal colors. Orange is made of red and yellow, green of blue and yellow, and violet of blue and red.

Tertiary color pigments are citron, russet and olive. These colors are composed of all three of the principal pigments. Red predominates in russet, yellow in citron, and blue in olive.

Complementary Colors.—Colors which balance or complete each other, that is, when complementary color rays are combined they produce white, and when complementary color pigments are mixed their chroma is changed and they neutralize, or gray each other. Placed side by side they enhance each other by contrast. Complements are found opposite in the color circle. See diagram which is suggested by the sequence of the spectrum (Fig. 29).

White is a pigment representing the highest value or light.

Black is a pigment representing the lowest value or darkness absorbing all light.

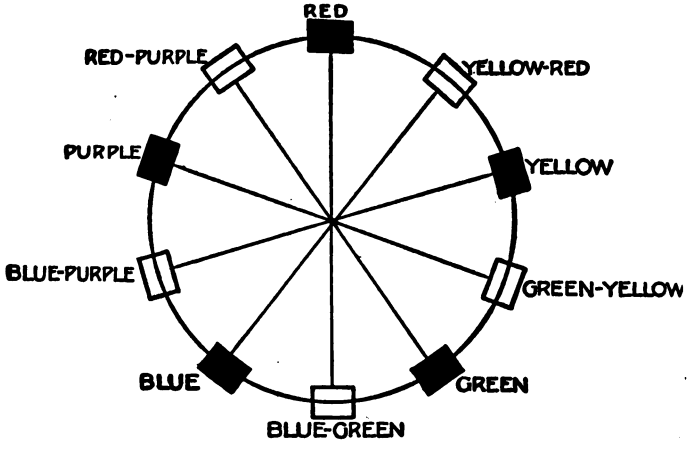


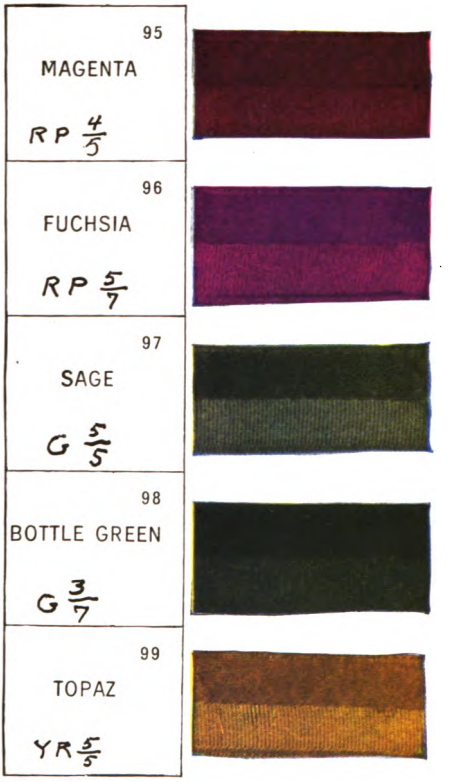
FIG. 29.—Color complements.

Gray is an impure form of white, therefore, neutral. It is a mixture of the opposites, black and white, or of pigments of opposite hues, which always neutralize each other.

The color couples or complements are (in hues): Green and red-purple; blue and yellow-red; purple and green-yellow; red and blue-green; yellow and purple-blue.

When these pairs are tested by the Maxwell discs they approximate white as nearly as pigments can. Maxwell color discs are discs of the standard colors made with a radial slit in order that one may be placed over another with varying degrees of area. The discs are used on a wheel, which, being spun rapidly, produces the effect of combining the color rays. It is used to test the relative proportion of different colors in combinations.

PLATE I



Commercial and theoretical notation of colored samples

Pure Color.—Any color of high intensity or chroma.

Standard Color.—A color as it appears in the spectrum, at its maximum; (it is only approximated in pigments).

Tone.—The general effect of a color or group of colors, the result of the combination of hue, value and chroma. This is a much misused term.

Tint.—A high value of a color, that is, near white and above the value of the standard hue.

Shade.—A low value of a color, that is, near black and below the value of the standard hue; a term commonly misused to indicate hue.

Warm Color.—Color which gives a sensation of warmth. Colors containing red and yellow.

Cold Colors.—Opposites of warm colors or those containing blue. The color sensation of green is neither warm nor cold unless combined with yellow or blue.

Scale.—A gradated series of values, etc., by comparison with which the degree of a quality may be established.

Color Scheme.—A selected group of colors. Used interchangeably with the term color harmony.

It is only by actual experience in the use of the mediums of an art that one can understand that art. Although the exercises in color may be limited, they are essential in order to develop the faculties of seeing color and appreciating its use. This is accomplished by analysis and synthesis. Let us proceed from definitions to problems consisting of exercises and plates.

Materials.—For developing the color problems it is best to get the most reliable pigments possible, preferably moist water-colors in tubes.

A limited palette of standard red, yellow, blue, Chinese white and lamp-black will answer most purposes, because blue and yellow mixed make green, red and yellow make yellow-red or orange, red and blue make purple. But when it is possible to have a larger range of colors, the work in color will be greatly facilitated. Good pigments are rose madder, vermilion, Venetian red, burnt sienna and cadmium orange, pale cadmium, aureoline, gamboge, viridian (green), and cobalt blue, new blue and ultramarine blue. Muffin tins of six or eight divisions are very convenient for holding water and mixing color.

Exercise 1.—*Flat Wash.*—The secret of a good wash is the thorough mixing of the pigments with the water and getting the mixture to the right consistency—a matter of experiment. With a good mixture of color fill the brush well and put the color on paper from left to right, drawing a puddle of color down with the stroke. The paper should be held slightly tipped, the puddle at the end may be picked up with a sponge or a brush. The wash must not be worked over. Tempera or opaque colors are used in a thicker consistency than clear colors. *Color Chart.* Make flat washes of pigments in the spectral colors, green G, blue-green BG, blue B, purple-blue PB, purple P, red-purple RP, red R, yellow-red YR, yellow Y, and yellow-green YG, using water color or tempera of standard colors in red, blue, yellow, green, or better, the various pigments as suggested above.

Test the washes by a good prismatic chart. Cut them into oblongs or squares and mount them around a circle in prismatic sequence of hues. Draw diameters to connect the opposite complementary hues. See diagram (Fig. 29). This gives a hue sequence.

Exercise 2.—*Oral or Written.*—Using illustrative material of plain and color fabrics, paper and objects, name the hues.

Exercise 3.—*Color Play.*—In order to have freedom in the use of the medium it is necessary to play with the color, making all sorts of combinations. For example, mix red with all the other colors in turn. Do the same with blue, etc., then mix three colors with varying quantities of each. Make washes of all these experiments and name according to ingredients used. There are no rules for mixing colors, so, facility comes through practice. The results may be useful for future exercises in notation. Match hues of objects.

A Chart of Values.—Arrange a neutral scale of water-color washes, using Chinese white and lamp-black. Cut in oblongs and number from ten (white) to zero (black). Five is the middle value. There are an infinite number of gradations between white and black, but nine are enough for practical use.

Next, take any color, say R, from the chart of standard hues and by decreasing and increasing its value make a color value scale. Water or Chinese white may be added for high values and black may be used in the low values of the color. There will be nine steps cut in oblongs and mount to the right of the neutral scale (see diagram, Fig. 30). By comparing the neutral value scale with the chart of standard colors, we find that hues reach their maximum at different values.

Exercise 4.—Name the value of colors in objects about the room according to corresponding number in value scale.

A Chart of Chromas.—Use same color scale as in chart of values (red). Mount one-inch squares. Then taking the middle value of the hue red, decrease it in chroma or intensity by mixing it with its complement blue-green 5 until it becomes neutral 5. Next mix red 5 with blue-green 5 until its chroma is half way between neutral 5 and red 5, thus making R of middle value and middle chroma. The result may be tested with the Munsell middle color cards. Then, combine red with its complement to form intermediate chromas between the middle chroma and gray, and intermediates between middle chroma and red 5 (diagram, Fig. 31). By adding water or Chinese white, increase the value of the three intermediate chromas; and by adding black decrease the values; complete the chart according to Diagram 4. This may be simplified by omitting the value scale of chromas. Fig. 32 is another suggestion for a chroma chart.

Textiles illustrating color design

If the ten hues of the scale are used by a class a complete diagram of 360 tones all notated or named will be the result, forming valuable reference material for color study.

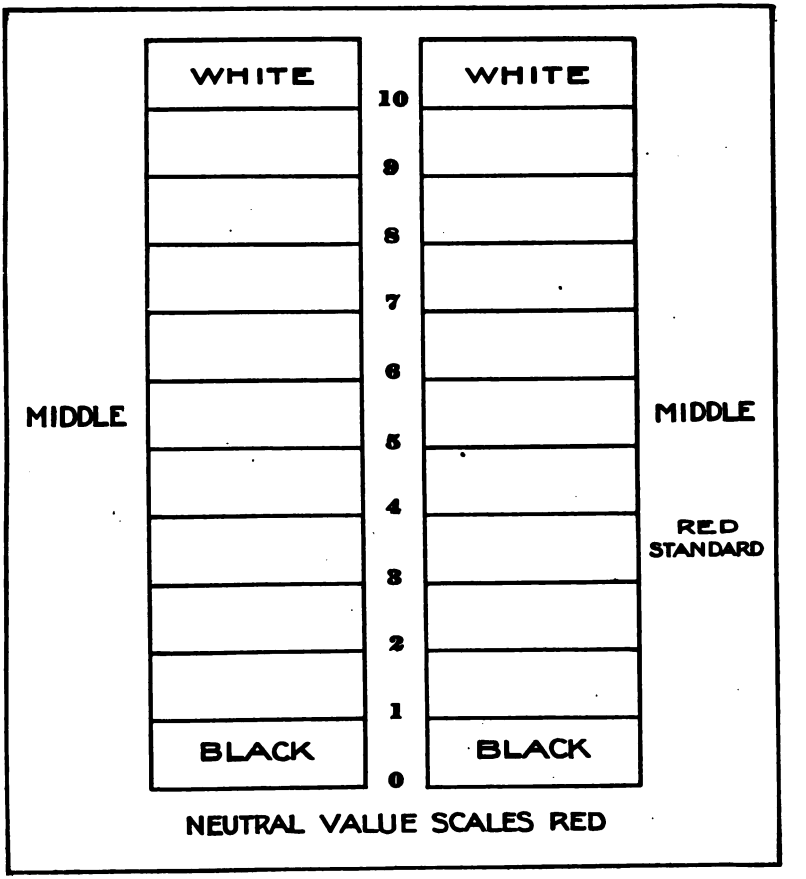


FIG. 30.—Chart of values.

We should now understand the three dimensions or qualities of color, hue, value and chroma. The next step is to recognize and become more familiar with them.

Notation.—Whatever system of notation is chosen it must be clearly understood and consistently adhered to. Munsell gives the following:

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Hue is notated with the initial letter; for example, red, R, blue, B, etc.

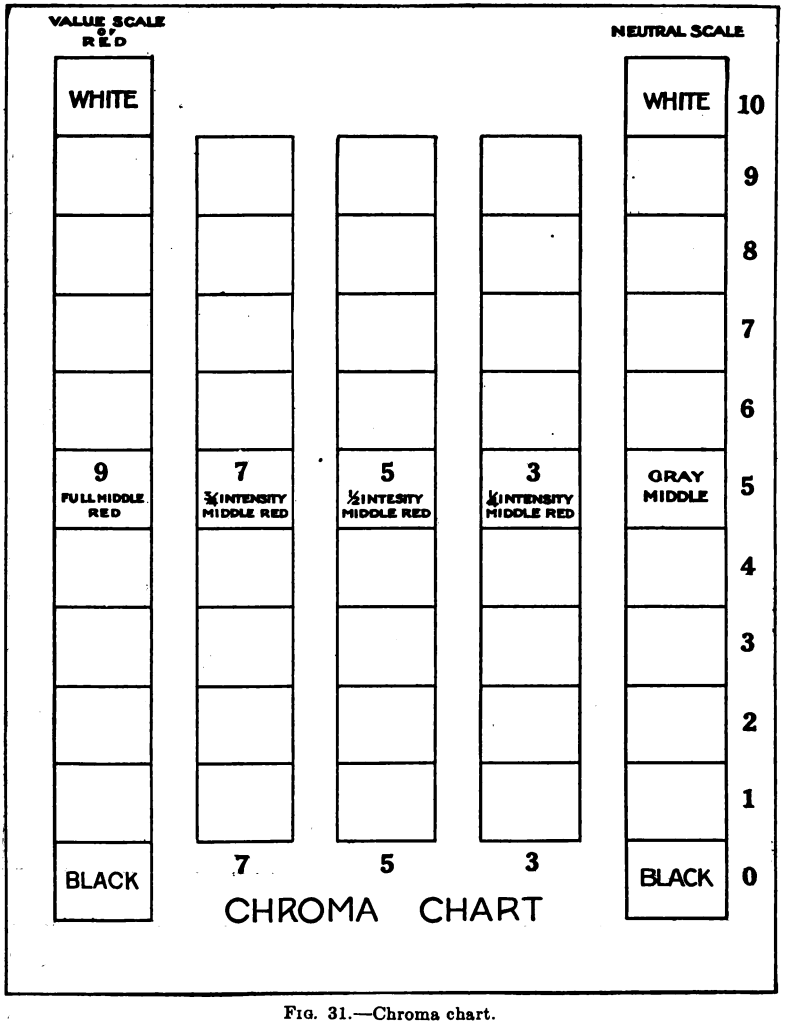


FIG. 31.—Chroma chart.

Value is indicated by a numeral placed above the line to the right of the initial. Thus R^5 means red at 5 of the value scale.

PLATE III

FIG. 1

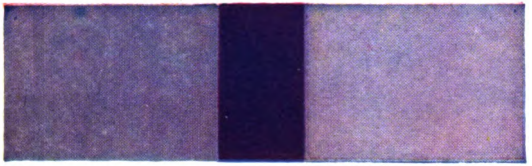


FIG. 2

FIG. 3

FIG. 4

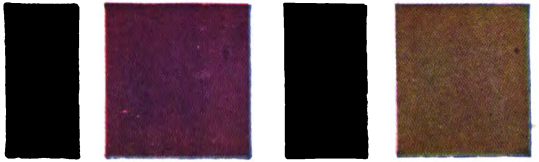


FIG. 5

FIG. 6

FIG. 7

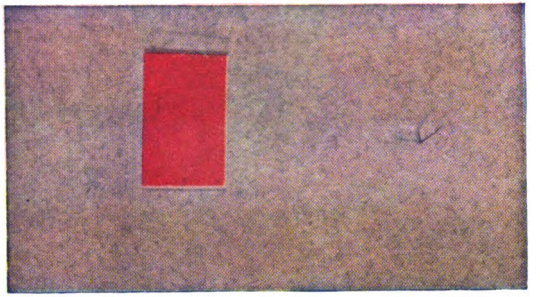
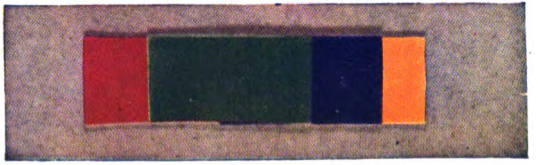


FIG. 8



Suggestions for exercises in color design.

Chroma is shown by a numeral below the line, thus R $\frac{5}{}$ means red of value 5 and a chroma one-half way between a full intensity and gray. In the chroma scale we have used only five steps. In order to keep them consistent with the value scale of nine steps we number them according to the diagram (Fig. 32).

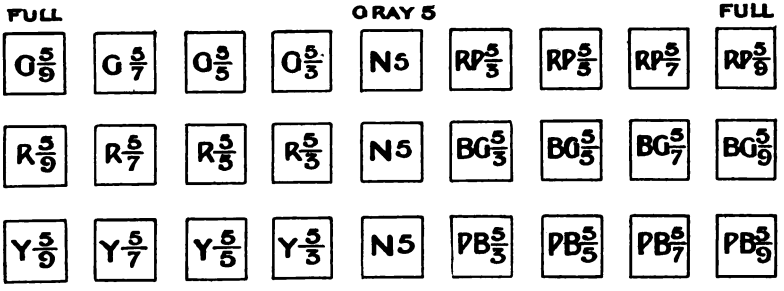


FIG. 32.—Development of chroma scale.

Color Classification.—Arrange a chart of mounted samples of fabrics in various hues. Classify or notate the colors as to hue, value and chroma (Plate I).

EXERCISES IN COLOR PERCEPTION THROUGH SYNTHESIS AND ANALYSIS

Exercise 5.—Using varied illustrative material classify colors according to hue, value and chroma—orally—students verify each other's answers.

Exercise 6.—Memorize color by classification, that is, look at a color for a minute and notate mentally—produce from memory—then compare.

Exercise 7.—Reproduce color from dictation.

Exercise 8.—Mix colors of various hues, values and chroma; record the results. *Color Play.* Value scales may be made of the most pleasing hues.

Exercise 9.—Using gradated colored paper samples select values, hues and chromas from dictation.

All of these suggestions may be enlarged upon, making innumerable short exercises and greatly increasing the interest in the subject.

Practice in color perception is most necessary, for upon it depends the training of the eye, which is the source of joy in color. The development of the faculty of seeing and feeling color repays one richly, for the world takes on a new aspect when the eye is able to discern the beautiful qualities of color in the simplest objects as well as in the greatest works of nature and of art. A city roof view becomes a vision of loveliness. The gas tank in the distance which

was simply red to the young painter has possibilities of opalescent splendor for the colorist. Passing a green cabbage-patch an artist once exclaimed, "What a beautiful purple glow on those cabbages!" while his companion replied, "I see only green." The wonders of the artist's brush may be recognized as the realities of nature by a seeing eye.

> "For, don't you mark? we're made so that we love
> First when we see them painted, things we have passed
> Perhaps a hundred times nor cared to see;
> And so they are better, painted—better to us,
> Which is the same thing. Art was given for that;
> God uses us to help each other so,
> Lending our minds out."

Color Design.—After one has become familiar with the properties of color, by learning to see them, one should practice the grouping of colors by making color schemes. This is the great test of one's sense of beauty, whether natural or cultivated. The instinct for using color will not develop by following dictated formulas—it grows through experiment guided by basic principles.

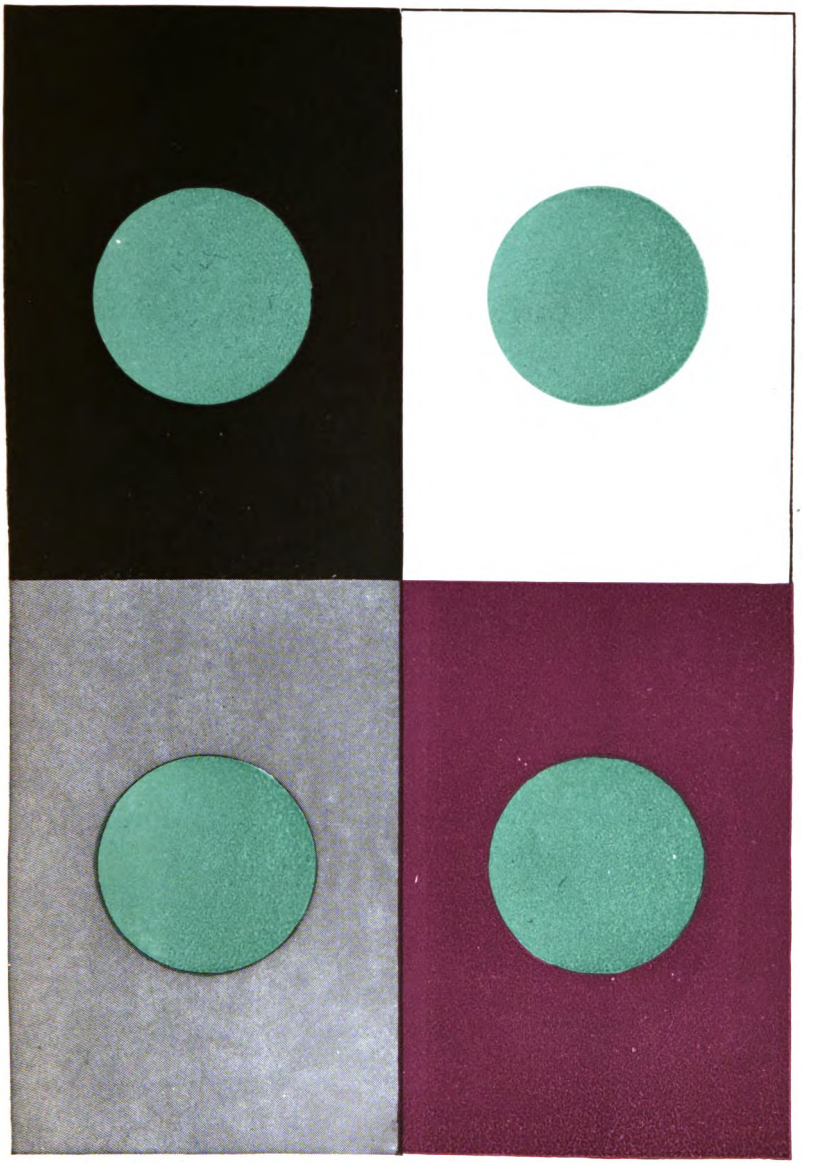
Design in color is the rhythmic or orderly arrangement of its properties (hue, value and chroma), in regard to relative position, area or quantity, and contour, and according to the principles of art, unity, variety and balance.

But in order to achieve a beautiful design one must have artistic impulse with a fine feeling for beauty. By "plunging in" and surrounding oneself with good examples of color design a sense of appreciation develops, which helps in recognizing and understanding the rhythmic relationships of the color qualities according to unity, variety and balance. Art training only provides the means of expression through which the creative impulse is to act, though sometimes through expression artistic impulse is awakened and nurtured.

Examples for the study of color design may be found in reproductions of paintings in art publications, illustrated magazines, books,[1] good modern posters, Japanese prints, figured textiles (Plate II), (the best of which are to be found among upholstery and draperies in larger stores), rugs, pottery, stained glass, old embroideries, illuminations and the realm of nature.

[1] The work of Brangwyn Dulac, Bakst, Boutet de Monvel and Howard Pyle is suggestive.

PLATE IV



Simultaneous contras.

The aim of the following exercises is to direct the observation and to suggest color thought.

Exercise 10.—Take several examples of color combinations and notate or record as to hue values and chromas.

Exercise 11.—Copy in flat washes a series of combinations or schemes from beautiful examples.

Exercise 12.—Describe in words a beautiful color design observed out-of-doors—notate from description. A memory of color sometimes is more beautiful than a copy of color harmony.

Exercise 13.—Take one color and try various combinations with it.

One must be familiar with the principles of art which govern design in color in order to have a standard for comparison.

Rhythm.—Underlying life and art we find rhythm. Our contact with nature is based on rhythm—the wave vibrations of light and sound, when rhythmic, give pleasurable sensations, and beauty results. Our response to rhythm is largely instinctive. So an art expression, conveying a sense of pleasure, must be rhythmic in order that the result may be beauty, the aim of art. Rhythm is the power possessed by an orderly arrangement, or organization of colors to appeal to our sense of sight and our nervous system irrespective of association. For this orderly arrangement of color, nature is the greatest teacher. In her color designs, from sweeping landscapes and sky effects to a flower or an insect, we will always find the three guiding principles—unity, variety and balance. A rhythmic color harmony without all these is impossible.

Unity holds parts of the composition together by means of a unifying or common element. Brilliant effects of nature are enveloped in a wonderful ethereal haze. Nature welds her colors, unifying and blending everything. Unity gives strength and subtlety.

Variety through contrast gives life, vivacity and interest to a harmony. Combination of opposites is the simplest form of variety—warm with cold colors, weak with strong chroma, and a dark with a light. Red with the blue-green of the poppy; autumn's purple asters and the golden-rod are suggestions of nature's contrasts.

Balance is the principle which brings about the perfect adjustment of unity and variety through the arrangement of the area and position of the three qualities of color—hue, value and chroma. Colors which have unity in the three qualities may be used in more nearly equal balance of area and position. Nature illustrates this in the relation of the sea to the sky. Colors having great variety in their properties are arranged in unequal accent, *i.e.*, balance—for example,

small spots of intense chroma are balanced on large areas of weaker chroma. Thus we see there are two kinds of balance, equal and unequal, but perfectly equal balance is dull—Nature avoids it.

Exercise 14.—Using illustrative material of all kinds make color notes of examples of unity, variety and balance by means of hue, value and chroma. Develop the exercises by indicating area and position of colors.

Unity will be found to exist, first, in related hues, values, or chromas, and second, in sameness of hue, value or chroma. Very intense colors may be unified by a sameness of chroma (Plate III, Fig. 8), while by using a very high or light value, almost any colors may be used together. Great contrast of hues, value and chroma are made possible through balance in the arrangement of area, or quantity, and position, as well as the combination with neutrals, *i.e.*, black, white and gray. Variety is necessary in all good harmony.

Unity in sameness of hue, and variety in value and chroma, are shown in Plate III, Fig. 1; unity in related hues, as well as variety in the yellow and green, in Plate III, Fig. 2. Unity in related hues and contrast of complements are shown in Plate III, Figs. 3 and 4; balance by the arrangement of quantity is shown in Plate III, Fig. 4.

How important is the element of position will be seen by noting the effect of one color placed in juxtaposition to another. Place a piece of bright blue-green on a ground of white, black-gray and red-purple papers successively and note the effect (Plate IV). There is a rule in connection with the juxtaposition of colors, *i.e.*, the law of simultaneous contrast, which is the modification of one color in juxtaposition to another through the effect upon the optic nerve. A hue is modified by the complement of its neighbor, because a color reflects its complement. Red and blue, when placed side by side, are affected thus—blue tends toward the green-blue scale or the reflected complement of red, while the red appears to have a yellow-red cast. Complements side by side strengthen each other according to this law. Note Plate III, Figs. 5 and 6, effect of blue with blue and with its complements.

Exercise 15.—Try experiments with colored papers and fabrics and discuss the results.

This law of simultaneous contrast should have important consideration in choosing the hues for a costume in relation to the wearer's coloring for the complexion is always affected by the complement of the neighboring color.

Balance expressed in area of chroma; unity in repetition of contours; variety in lines

Area is a means toward balance. A small area of warm color will balance a larger area of cool. A bright spot of intense color is sufficient for a much greater area of dull color. This gives accent or emphasis to a design (Plate III, Fig. 7). The more closely the areas agree the closer should be the hues, values and chromas.

Contour in color design may be used to add emphasis by attracting attention to a color spot through interesting form; it is a means toward variety in color masses (Plate V). Thus, a well-made bow of color may add much more to a gown or hat than the same thing poorly arranged. A pointed colored girdle is often better in a design than a round belt.

Texture.—The characteristics of different materials sometimes make or mar a color scheme. Cotton and woolen fabrics will be seen to absorb light and are dull, velvets reflect light and are lustrous, silks have the greatest play of light and dark. Often in a combination of colors the subtle qualities of texture modify the whole composition. Transparencies, like tulle and chiffon, are the designers' most precious assets; they restore unity to almost any combination of colors and fabrics; they lend variety and sometimes control elements of area, position and contour.

Exercise 16.—Originate color arrangements by draping fabrics to illustrate the elements of area, juxtaposition and texture.

Exercise 17.—Make four tracings of a fashion figure illustrating a gown:

1. Apply a color design taken from nature or art.
2. Originate and apply a color scheme in one hue with change of value only (Plate VI).
3. Originate and apply a scheme showing unity through related hues.
4. Originate a design in colors illustrating variety in complements and unity in chroma (Plate II).

Similar exercises may be used to illustrate many other principles of color harmony. To show the importance of color in different dress designs, they are most valuable. Sometimes a gown looks mediocre in one scheme and when traced and colored in another combination it is quite distinguished (Plate VII). The color scheme must harmonize with the feeling in the design of the dress. Hence in selecting a design the color of the material should be kept in mind.

In the foregoing study of color theory an eye for color and color harmony should be acquired, and the natural instinct much accelerated and refined. But the aim of all this knowledge is to be able to express oneself in color by means of clothes. Color applied to

clothing cannot conform to definite rules. Some of the many variables which cause this difficulty are touched upon in the succeeding paragraphs.

The effect of color on the wearer cannot be too much emphasized in choosing materials for a costume. First, in relation to her outward appearance in regard to hair, eyes, complexion and figure. Many color suggestions have been made for different types; for instance, blue used to be ascribed to blondes, and pink to brunettes, etc., and color fashions change often, so the only safe guide is one's own judgment, or taste and experience. Always enhancing the best features and subordinating the less attractive ones is the only fixed rule in clothing. Hair of a defined blonde, brunette, or reddish hue becomes a part of one's color scheme; light brown hair does not become an important feature in the design, but calls for a more colorful background.

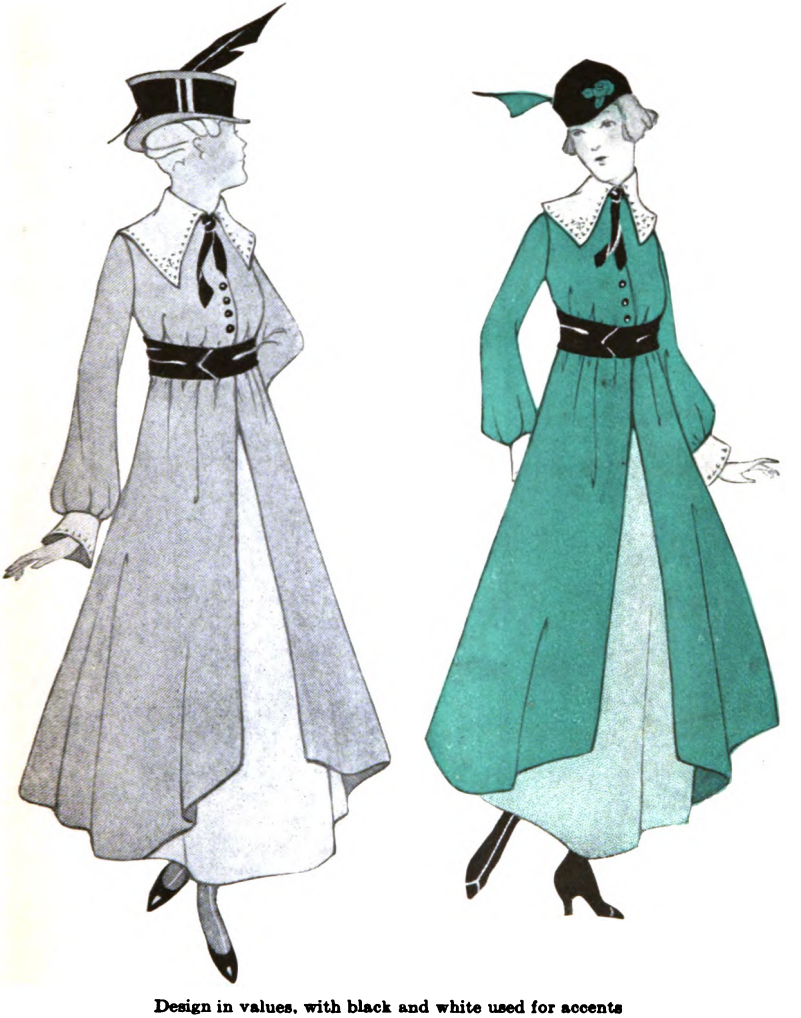
Health, age and the weather change the appearance of the complexion, hence hard and fast rules are not applicable. Experimentation is the only means of solving this problem. A clear, healthy complexion will look well in almost any setting. Pallor and sallowness are two bugbears to be dealt with. A pale complexion usually appears better in juxtaposition with a warm hue, but the color must not be too dark nor too intense. Sometimes sallowness is counteracted by dark blue or warm brown. Eyes, if clear, and of good color, should be featured; if light, with a pale complexion, they should be considered in connection with the principle of simultaneous contrast.

Exercise 18.—Experiment with color in relation to various complexions, by a process of selection, rejection, subordination and emphasis. Take notes and form conclusions.

A well-proportioned figure with good lines does not have to be considered, but extreme proportions must have the first place in the color scheme. A large woman must clothe herself according to her size. Warm, advancing colors must be rejected by the stout figure. Black is the commonly accepted garb of this type, but it has been found that discriminating hues of violet, blue, blue-green, or taupe are worn very successfully.

Whistler's portrait of the brewer's wife suggests color as a solution for the problem of the short, stout model; he transforms her to a tall, graceful form—apparently, by placing a touch of bright color on the tip of the lady's slipper. An optical illusion does it—the eye was caught first by the slipper tip, and as the glance wandered

PLATE VI



Design in values, with black and white used for accents

upward to the face—unconsciously the beholder felt that the eye had travelled far and the lady's stature increased with the upward glance.

Color Suggestions.—Almost any color may be worn if there is a becoming transition from the clothing to the face by means of a transparent material. Black next to the face is almost impossible for anyone; a broken black is best, that is, a brocade or stripe effect which catches the light. Black and white combinations are often very effective. The sallow or pale should not wear black, unless very young. Gray is difficult for all except clear, rosy complexions. White becomes most people if it is not pure white, but is tinged by some hue. Bright red is stunning for evening wear for some brunettes and dazzling blondes. Millais' Portia illustrates the latter. Blue is the blessing of many American women, so much so, that abroad we are known by our blue costume. Green suits the intermediate type very well. Yellow is delightful for evening wear and in some of its neutralized hues is becoming to most types. Red-purples are the colors the intermediate type wears to best advantage. Composite, or colors of mixed hues, are worn more easily than pure colors. There seems to be, with some persons, a reaction of color on the mood of the wearer. Just as we are conscious of new clothing for a while, so we are all conscious of color changes in our costume for a time at least. If one feels dull, a bright color may bring change of mood. Much of the symbolical use of color seems, however, to be a matter of custom. For example, we use black for mourning, while in certain countries white is used, or purple.[2] Many of the great emotional artists choose their costumes carefully as regards color, that it may aid in expressing the mood they wish to portray. Color, in keeping with the occasion, is largely a question of color sensibility. So for evening dress we customarily wear light, gay colors. For business, on the other hand, woman's dress, while distinctly feminine, properly avoids anything in color or design suggestive of the social occasion. It is the spirit of the

[2] In ancient art, we find color used symbolically—the Egyptian figures wear colors indicative of their rank, while the characters of the early painters are robed in colors signifying the attributes the artists wished to express. Color symbolism is used for ceremonials and in allegory and poetry. There is some diversity of interpretation, but the following are common meanings: White, divinity, chastity, integrity and innocence; blue, fidelity and truth; purple, power, royalty; yellow, wisdom and fruitfulness; green, hope and envy; red-purple, spirituality and faith; black, wickedness and sorrow; red, passion, love, victory and joy. In combination they have distinct interpretations.

occasion that color should suggest, for color speaks very loudly for the wearer. Accessories may also play an important part in a costume; sometimes a string of beads, or a bit of colorful jewelry (jewelry that has its use, *e.g.*, as a brooch, as well as its decorative value) will make a good design out of a simple costume.

In designing one's clothing there is a wonderful opportunity for giving expression to the creative impulse. One may by experiment learn certain color harmonies which suit one as an individual and which serve as a partial guide; practice in purchasing ready-made garments where one can judge in advance how becoming the gown will be in relation to the complexion and figure, and how well designed the scheme will appear, will develop judgment regarding color in dress. The way to control color is to use color—power will come through experiment and experience. Experiment not only with pigment but with fabrics in various combinations as they might be used in dress. Make a point also of studying a costume as you see it worn, on the street and in assemblies, and as it is displayed in stores, and illustrated in books and colored plates of historic costume. So your confidence in your own color judgment as applied to dress will grow and bring increasing satisfaction.

Exercise 19.—Exercises in color designs for different complexions and for figures and for various occasions may be carried out in traced fashion drawings, or may be simply discussed and criticised.

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PLATE VII

Same design in different color schemes

CHAPTER V

PATTERN MAKING

SHIRTWAIST AS FUNDAMENTAL PATTERN

DRAFTING patterns to individual measures is a step of preparation toward becoming a designer of clothing, a step which not only trains both eye and hand to greater accuracy, the eye to keener appreciation of line, but aids in a better understanding of the construction of garments. To approach the subject by means of simple problems, is the purpose of the following instruction.

Shirtwaist Pattern.—The simplest problem with which to begin the study of pattern making, is the plain shirtwaist having a sleeve with fulness at the top. Such a pattern, (fitted and corrected), can be adapted to many uses; from it can be developed tailored waists, with back or front closing, lingerie waists, silk blouses and boudoir jackets. Corset cover, chemise and night-gown patterns may also be developed from this pattern with the expenditure of very little time and labor.

Before drafting a pattern for any garment, it is well to examine a completed garment from as many points of view as possible. In Fig. 180, p. 313, is shown a completed shirtwaist. Study this carefully and note the following points which will be of interest when drafting the pattern:

Parts of the Waist.—The parts of this waist are: fronts, a back, sleeves, placket facings, cuffs, a neck and a waist band.

Seams.—The seams in this waist are: the shoulder, underarm and sleeve seams; also seams which join the placket facings and the cuffs and the sleeves and collar band to the waist. Fulness, held by gathers, is found where one part of the waist is larger than another, where the sleeve is set into the cuff and armhole, and where the waist is placed to the band.

Now turn to Fig. 38, in which are shown the pieces of a drafted shirtwaist pattern, placed on material ready for cutting a trial waist. These correspond in their parts to those of the completed waist, except that they represent but one-half of the whole garment, because when cutting from material, two thicknesses are usually cut at one time. There is but one front, one-half of a back, one sleeve, one cuff and one-half of a collar band. The waist band and placket facings

are straight strips of material, so do not require patterns for cutting.

Now look at Fig. 80, showing a shirtwaist which has been blocked out on a dress-form. This is called a draped pattern. The waist is plain and smooth at the shoulder and across the chest. At the waist, in both center front and back, there is fulness, which has been folded away in small plaits turning from the center, and may be held in place by a tape pinned about the waist. Further study of this pattern will help us to discover what measures would need to be taken for a drafted pattern which should be drawn to accurate measurements of the figure for which the pattern is to be made. In order not to be short-waisted and pull up above the skirt belt, nor drag from the neck band, it must be long enough in the center back, center front and under the arm; therefore we need to take three length measures—the length of the back, length of front and underarm measure. Before taking any measures, a tape should be placed around the waist in an even line.

The length of back should be taken from the bottom of the neck band (or bone in back of neck) to the bottom of the tape at the waist.

Length of front should be taken from the bottom of the neck band (or hollow of the neck) to the bottom of the tape at the waist.

Underarm measure should be taken from the lower edge of the armhole, or the hollow of the arm, to the bottom of the tape at the waist. This can best be done by placing the tape measure at 10-inch point over the short arm of the square and the square directly under the arm, being careful that the shoulder is not raised out of natural position, and measuring to the bottom of tape at waist; then deduct 10 inches from the amount above the waist tape, to get the correct measure. This measure averages about one-half the length of back, so that for a shirtwaist one may safely draft it so, but the measure should be taken for a test measure.

Let us turn again to Fig. 80 to see if we can discover other measures we may need for drafting the pattern. We have provided for the waist being long enough at all points, so we should next look to having it large enough to meet around the figure, and broad enough in each of its parts to admit of free, unrestrained movement of the body and arms. We find the largest round measure of the body at the fullest part of the bust, therefore our first round measure should be the bust measure. The waist must also fit at the neck and waist, so measures must be taken of these parts of the body. The

waist must also be wide enough across the broadest part of the chest and back, from armhole to armhole. This necessitates the taking of other measures, the width of the front and the width of back.

Bust measure should be taken (standing behind the figure) around the fullest part of the bust, an easy measure, one-half way between bone in back of neck, and the waist, keeping the tape straight across the back.

Waist measure, taken around the waist, a comfortably snug measure. *Neck measure,* taken around the neck at the base of the neck, an easy measure.

Width of back should be taken across the broadest part of the back between the shoulders, usually about one-quarter way from neck to waist in center back. This measure provides a point of location for the back curve of the armhole.

Width of front, taken across chest, usually about 2 inches below hollow of neck. This measure gives a point of location for the front curve of the armhole.

NOTE.—If one places the thumb under the arm and the first finger on the bone at the shoulder, in taking the width of back and width of chest measures, it is easier to locate a point at which to begin to take the measure, as the hand forms an armhole curve, from the center of which the measure should be taken.

Armhole measure, taken around arm over bone in shoulder. (Used as a test measure.)

Review measures in the order and method of taking them.

A few points still unnoted in Fig. 80 are the location of the shoulder and underarm seams.

The shoulder seam on this pattern is found a little back of the very top of the shoulder, a good location. The upper end of this seam touches the neck band at a point about one-sixth of the distance around the neck, measuring from the center back. The opposite end at the armhole is the same distance (*i.e.,* one-sixth of the neck measure) above the point at which the width of back was taken, but one-half inch nearer the arm. This determines another point for the location of the armhole.

The Underarm Seam.—The top of this seam, which is directly below the end of the shoulder line, gives the last point of location for the armhole; at this point, the curve rises about one-half inch above the actual underarm measure. At the waist line, it falls toward the back a little, rather than at right angles to the waist line.

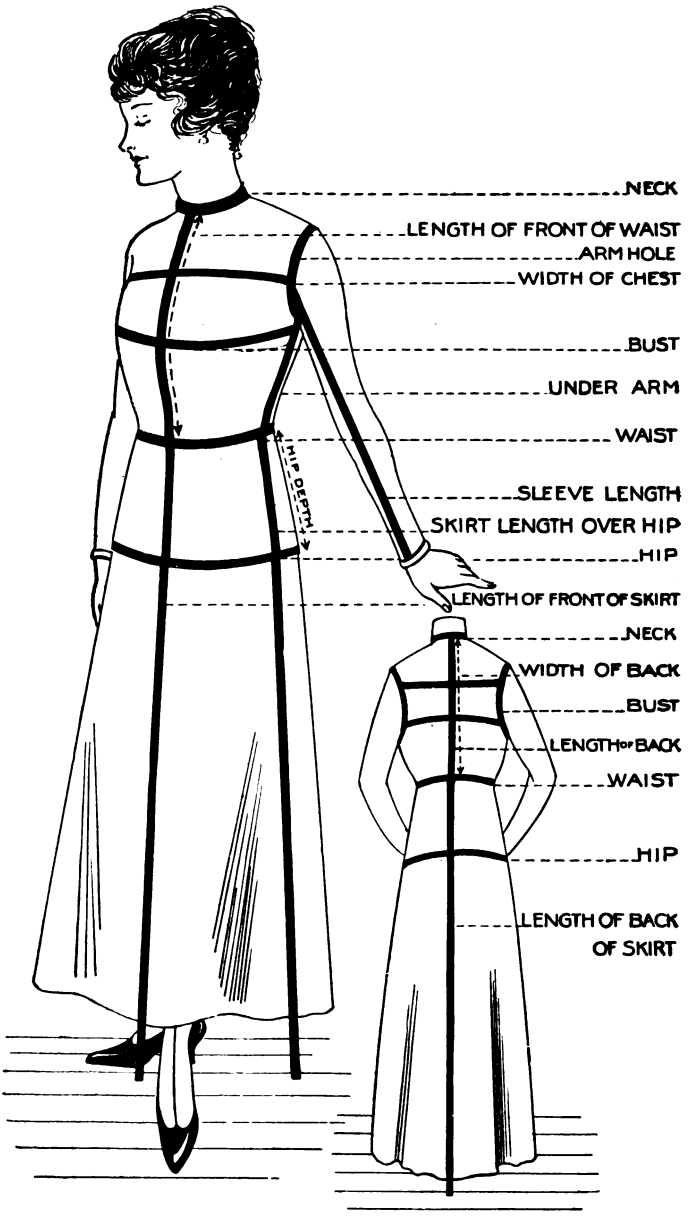


FIG. 33.—Illustrating method of taking measures for drafting shirtwaist and skirt.

It is sometimes difficult to see the relation of the lines of the flat drafted pattern to those of the figure. In Fig. 33 lines are shown on the form which represent the points at which the required measurements were taken and also show the relation of the construction lines of the pattern to the scheme of measures taken. In Fig. 34 the construction lines upon which the pattern would be

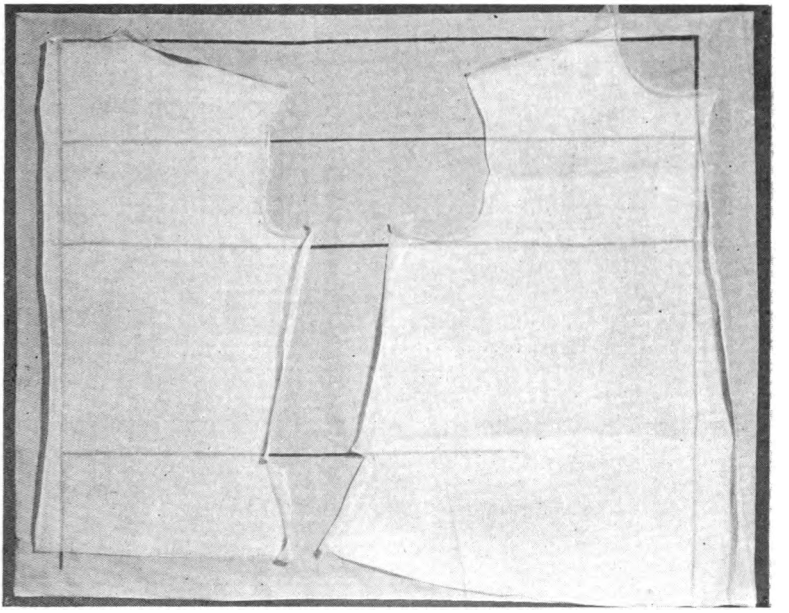


FIG. 34.—Shirtwaist pattern draped on form, then laid over construction lines of drafted pattern to show the relation of the latter to a completed pattern.

drafted can be seen as they show through another pattern, which has been taken from the form, and laid over them. The relationship is not difficult to trace in this way.

Shirtwaist Sleeve (with Fullness at the Top).—Reference to Fig. 33 for examination of the arm should easily discover the necessary measures for drafting the sleeve. The measure of the largest part of the arm is necessary in order to have the sleeve of sufficient girth. The length of the sleeve should be taken from the muscle at the point where the arm joins the body in front, to the wrist bone. From this measure the desired depth of the cuff should be deducted. In order to have the cuff the correct size and the requisite amount

of fulness at the bottom of the sleeve, the measure of the hand, taken over the knuckles, with the fingers extended as for putting through sleeve, is also necessary. Add to this 1½ to 2 inches. The armhole measure should also be taken.

Review measures required and the order and method of taking.

Draft a shirtwaist and a sleeve pattern to the following directions, using standard measures given below. (Use diagrams, Figs. 35 and 36, as a guide in drafting.)

Shirtwaist with Sleeve, Having Fulness at Top (Fig. 33)

Measures Required	*Standard*
Length of back	15 inches
Length of front	15½ inches
Length of underarm	7½ inches
Bust	38 inches
Waist	26 inches
Neck	13½ inches
Width of back	14 inches
Width of front	14½ inches

Sleeve

Length (minus depth of cuff)	16½ inches
Armhole	16 inches
Around upper arm	12 inches
Around hand	8 inches

To Draft Shirtwaist: (Fig. 35)

Back: (Fig. 35)

AA equals line of indenifite length.
AB equals length of back.
BB equals waist line (two-thirds of *AA*).
CC equals bust line (one-half of *AB*).
DD equals width of back, and width of front line one-half of *AC*.
AE equals one-sixth of neck measure.
EF equals three-quarter inch.
AF equals curve for neck.
DG equals one-half width of back.
GH equals *AE*.
HI equals one-half inch.
FI equals shoulder line.
CJ equals one-quarter bust measure minus 1⅜ inches.
BK equals one-quarter waist measure.
KK^1 equals one-quarter inch.
BK^1 equals waist measure.
K^1L equals underarm measure plus one-half inch through *J*.
IGL equals armhole.
BN equals four inches.
KM equals four-inch ruler touching *F* and K^1.
Connect *B* and *N*; *K* and *M*; *N* and *M*, for bottom of waist.
T equals one-half *FI*.
TU equals one-quarter inch.
FUI equals curve for shoulder.

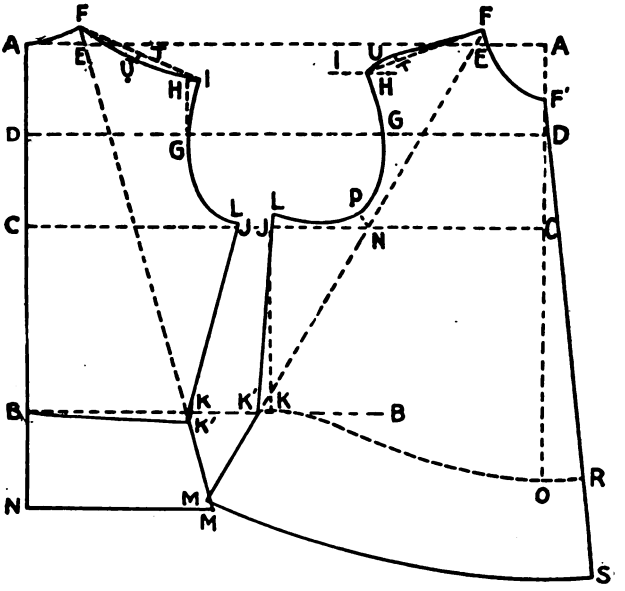


FIG. 35.—Draft for shirtwaist pattern.

Front: (Fig. 35)

AE equals one-sixth of neck measure plus three-eighth inch.
EF equals one-half inch.
AF[1] equals one-sixth of neck measure.
FF[1] equals neck curve.
DG equals one-half front measure.
GH equals two-thirds *DA* (draw dotted line to left of *H*).
FI equals shoulder line, one-quarter inch shorter than back shoulder, end of ruler on *F*, shoulder measure at *I*).
CJ equals one-half bust measure minus *CJ* of the back.
JK equals dotted line at right angles to *CJ*.
KK[1] equals one-half inch.
K[1]*L* equals underarm measure plus one-half inch passing through *J*.
FK[1]*M* equals dotted line *F* to *K*, extending four inches below *K* (*M*).
N equals point of intersection lines *CJ* and *FK*.
F[1]*O* equals length of front.
NP equals three-quarter inch, ruler on *O* and *N*.
IGPL equals armhole.
OR equals one and three-quarter inches.
RS equals four inches.
F[1]*RS* equals centre front line.
K[1]*OR* equals waist line of front.
MS equals bottom of front.

T equals one-quarter *IF*.
U equals one-quarter inch.
IUF equals curve for front shoulder.

Test armhole and neck of pattern by measures taken. Hold tape measure on edge when measuring curves.

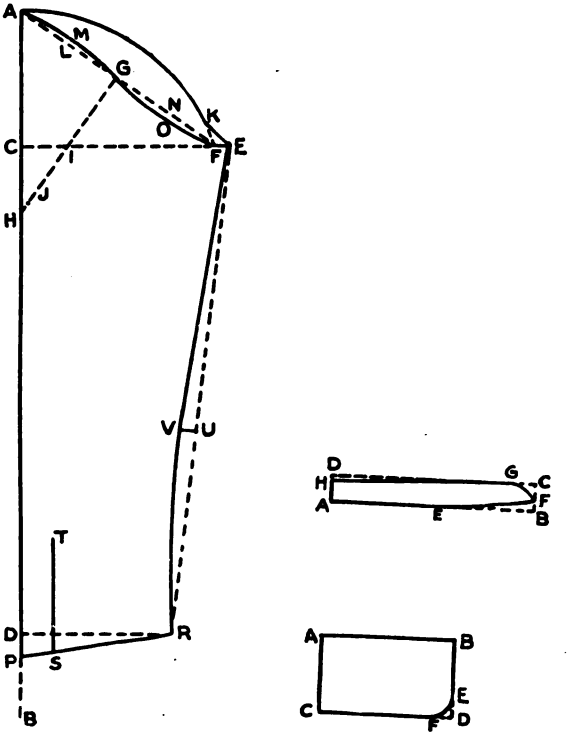


FIG. 36.—Draft of shirtwaist sleeve (gathered at top), cuff and collarband.

To Draft Sleeve (Fig. 36)

AB equals line of indefinite length.
AC equals one-quarter armhole plus three-quarter inch.
CD equals inside length of sleeve.
CE equals one-half width around top of arm plus desired fullness.
EF equals one-half inch.
AF equals dotted line.
G equals one-half *AF*.
GH equals line at right angles to *AF*, intersecting *CE* (point of intersection *I*).
IJ equals three inches. If three-inch point falls outside *AD*, use point of intersection instead for *J*.

AF equals curve for top of upper sleeve (using *J* as pivot, *JA* as radius, to swing curve from *A* to *K*).
FK equals one inch along curve.
KE equals backward curve.
GL equals one-half *GA*.
LM equals one-eighth inch.
GN equals one-half *GF*.
NO equals one-quarter inch.
AMGOE equals curve for top of under sleeve.
DR equals one-half hand measure plus one-half desired fulness.
DP equals three-quarter inch.
PR equals curve for bottom of sleeve, straight one inch to left of *R*.
PS equals one inch.
ST equals four inches at right angles to *PR*.
RE equals dotted line.
RU equals one-half *RE* minus depth of cuff.
UV equals one-half inch.
EVR equals inside line of sleeve.

Fold paper on line *AP*, and crease; trace outline of under sleeve, and cut out around pattern. Fig. 37 illustrates sleeve opened out.

Shirtwaist Neck Band (Fig. 36)

AB equals one-half neck measure plus one-half width of box plait, or hem.
BC equals three-quarter inch.
BE equals one-half *AB*.
BF equals one-quarter inch.
FEA equals bottom of band.
CG equals three-quarter inch.
AH equals one-eighth inch.
FGH equals top line of band.

Place *AB* on lengthwise thread for cutting out.

Shirtwaist, Cuff (Fig. 36)

AB equals one-half hand measure plus one and one-half to two inches.
AC equals desired depth, two and one-half to three inches.
ABCD equals rectangle.
DE equals five-eighth-inch curve when round corners are desired.
DF equals five-eighth-inch curve when round corners are desired.

Place *AC* on crosswise fold for cutting out.

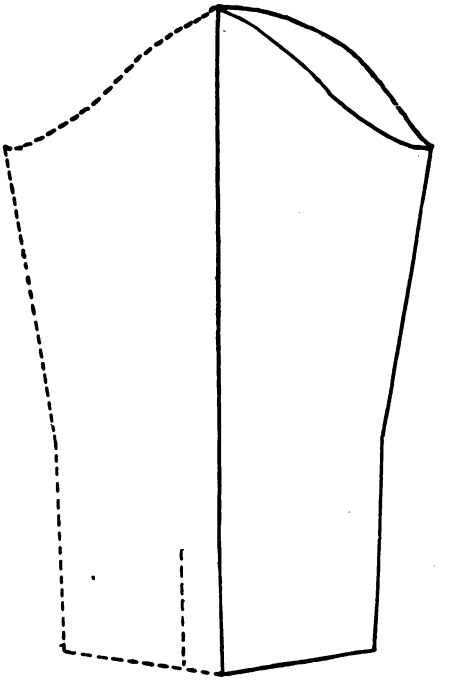


Fig. 37.—Shirtwaist sleeve pattern opened out.

Pocket.—Use draft of pocket given under mannish shirt, or middy blouse. Have shirtwaist pattern corrected. Draft to own measure a shirtwaist, sleeve, cuff, and neck band.

Second Draft to Individual Measures.—When the trial pattern has been corrected, practice taking each other's measures; after these have been verified, draft pattern of shirtwaist and sleeve to your own measures. Test for accuracy of measurement. This pattern should then be cut in inexpensive cambric or muslin, fitted, and alterations made, and pattern corrected before cutting into material for waist.

Testing Patterns.—It is best to test all skirt, shirtwaist and sleeve patterns, in inexpensive materials, before making up. Light weight unbleached cotton cloth or cambric is suitable for this purpose. It is well to have a goodly supply of such material, if one is doing a great deal of sewing. Keep muslin skirt patterns; they can be used for testing smaller garments, waists, sleeves, collars, etc. When alterations are made in these patterns, they should be made also on the original paper pattern, and the latter used in cutting the garment, as otherwise there is likelihood of the neck and armhole lines being stretched; the edges of the paper pattern are also firmer for marking seams, which is at least safer, for inexperienced workers.

TESTING SHIRTWAIST PATTERN

To Cut Out in Muslin.—See Fig. 38 for suggestion. Place the cut ends of the muslin together.

Front.—Lay the broad end of the front of the pattern to the cut ends of the goods, fold back one inch on each selvedge edge, and place the center front on this fold. Pin to muslin.

Back.—Fold the selvedge edge of one thickness of material over from the opposite side far enough to place the center back on the fold, and allow plenty of seams. Or, place center back one-quarter inch from selvedge, and use seam center back, which is allowable in testing pattern.

Sleeve.—Place the sleeve on the remaining single thickness of cloth, having the center fold of the sleeve on a lengthwise thread. Place so there is ample seam allowance. Pin to place.

Neck Band and Cuff.—Place patterns so lengthwise threads run around the neck and arm. Cut only one thickness of each.

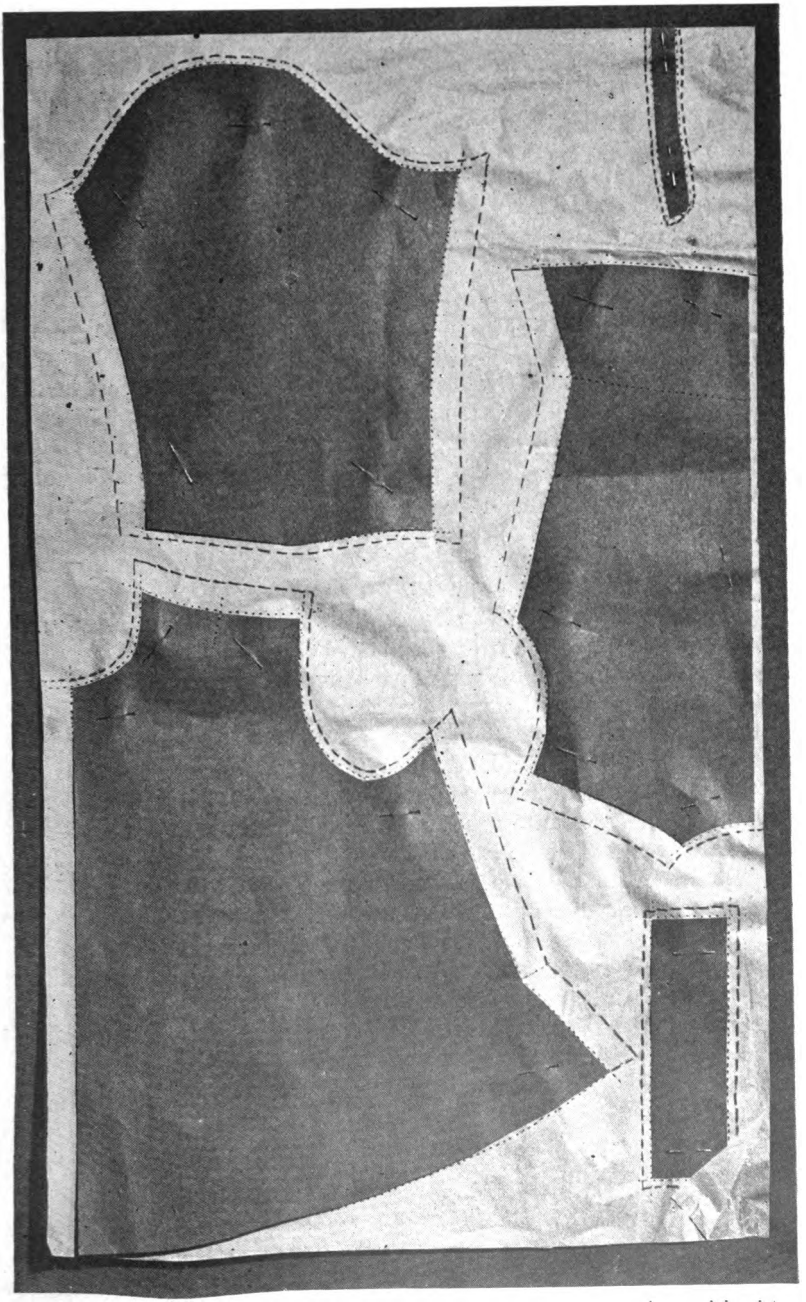


FIG. 38—Shirtwaist pattern placed on cambric or muslin, ready for cutting a trial waist.

Seam Allowance and Cutting.—As there are usually no seams allowed on drafted patterns, it will be necessary to make this allowance when cutting. *Waist,* allow one-inch seam on shoulder and underarm; one-quarter-inch at neck and armhole; nothing at the bottom. *Sleeve,* allow one inch on length seams and three-eighths inch at top and bottom. *Neck band and cuff,* one-quarter inch. Do not mark the seam allowance, but learn to use your tape measure, passing it along the edge of the seam at the required allowance, and cutting along the outer end of the measure. This will help to train your eye for distance, and give you assurance. Later, you will be able to cut accurately without even this guide. Lay aside all pieces left from cutting.

Marking Seams.—It is more orderly to cut all the pieces of the pattern, then trace the seams. *Waist:* Trace waist, neck and armhole lines first, then the shoulder, center of shoulder, and the underarm seam, beginning at the waist line and tracing up and down along edge of pattern. *Sleeve:* Trace length seams, also top and bottom, along edge of pattern. *Collar Band and Cuff:* Trace all around edges of pattern.

To baste for fitting (Fig. 184), mark waist, neck and armhole lines with colored thread; also center, back and front lines, and center of shoulder. Turn right-hand side of front on center line and baste. *Underarm Seam:* Have waist and armhole lines meet; pin seam (pins at right angles to seam), keeping traced lines together. Baste from waist line up and down, using small stitches. *Shoulder Seam:* Hold back shoulder toward you while basting. Have neck lines, armhole lines and center shoulders meet. Ease the fulness of the back into the front shoulder. Baste seam of sleeve. The collar band and sleeve are not placed until after the first fitting.

To Fit Waist.—Clip underarm seam at waist line, and two inches above and below to let it spring so as to provide for good fitting; also sleeve seam at inside curve. Put waist on, with seams inside, lapping it so that center front lines meet; pin together. Draw waist band around waist, turning underarm seams to front, and pin band. Adjust fulness. Look waist over carefully before fitting. A well-drafted pattern should need little alteration. Fit only the right side at first fitting. See that the waist fits easily throughout.

Following are some faults which might be found, together with method for correcting them:

Loose in Neck.—Pin up shoulder seam at neck and slope to armhole. This will usually make neck too high; clip neck at several points, and pin neck band again into place (Fig. 39*A*). If the waist seems tight at neck and chest, let the whole front out and mark new center front line.

Fine wrinkles in front at right angles to shoulder,—front shoulder needs stretching on back. Rip seam and throw more fulness into back shoulder seam by stretching front seam on back.

Wrinkles (deep folds) which draw from tip of shoulder to armhole occur sometimes on sloping shoulders. Pin a deeper seam at armhole, sloping to nothing at neck. This will sometimes raise the armhole too high under the arm, so it must be cut lower (Fig. 39*B*).

A similar result may follow when the grain of the material in the front of the waist does not run at right angles to the shoulder line, but runs toward the neck at the shoulder seam. This occurs more often, however, in commercial patterns. To correct, open shoulder seam and slip front of waist down on back until wrinkles are removed and grain is correct; then pin again on same shoulder line; notch center of shoulder seam so as to put together correctly again. Cut off extra material from front at armhole and build up again at neck (Fig. 39*C*). Very square shoulders sometimes cause a deep wrinkle across the chest and back. Open shoulder seam at armhole and let it down for fleshy figures, but this would make the armhole too large for slight figures. It is better in this case to take up shoulder seam at neck, sloping to armhole, then cut neck out in front and back (Fig. 39*A*).

Armhole.—If armhole line is not good, notice whether shoulder seam is too long or width of back or front at fault. Mark corrections. If a figure is very full in the bust and flat under the arm, quite a little fulness will be found in the waist, at the armhole, just above the bust. To remove this in a shirtwaist, open the underarm seam and slip the front down on the back, which makes the front more bias just above the waist line, giving fulness where needed. Pin seam, build up the front at the armhole and mark new waist line (Fig. 39*D*).

Waist Band.—When arranging fulness in the back, pin belt at underarm seam, then again where fullness should begin; the bottom of the belt should come to waist line. Mark the center on belt very carefully, also where fulness stops and where the belt is placed

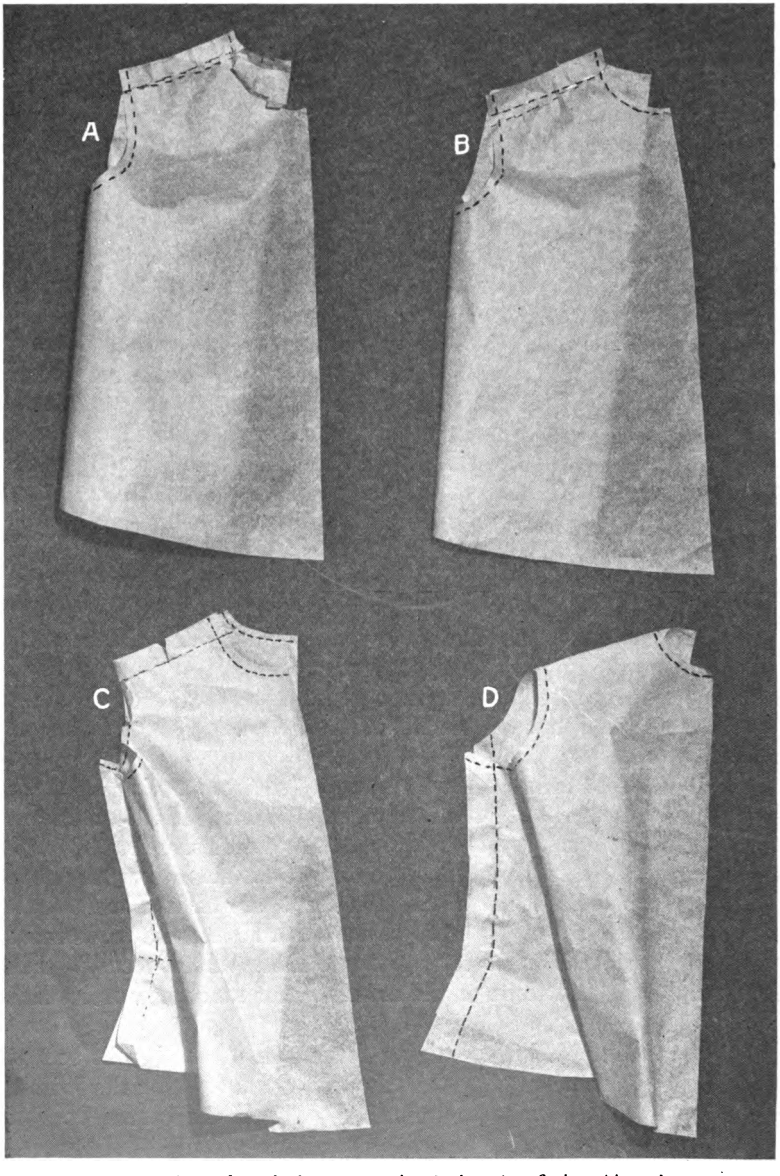


FIG. 39.—Several methods of correcting faults when fitting shirtwaists.

to the underarm seam. Remove waist, trace alterations, open seams and trace on opposite side of waist; rebaste, and try on again.

Place sleeve and neck band before second fitting.

Neck Band.—Only one thickness is necessary for fitting. Turn shoulder seams toward front. Fold band on tracing and baste. Find center of band, place to center of neck, on right side of waist, pin edge of band on neck line of waist, being careful not to stretch neck; let end of collar band cover the one-inch extension. *Waist Band:* Baste a piece of tape or band made of cambric to waist at center back, ready to adjust fulness when fitting. *Cuff:* Turn edges of the single piece used for fitting, baste to place. Gather the bottom of the sleeves one-quarter inch from edge, leaving three-quarter inch plain each side of seam. Place cuff on gathers, letting the end extend one-half inch beyond placket opening on the upper side of the sleeve. Baste to sleeve.

To Place Sleeve in Waist.—Mark armhole, measure one inch back of shoulder seam on armhole. Fold armhole in half at this point, and at the opposite point, on the lower part of the armhole, mark the place for the seam of the sleeve. Then fold armhole again, so that the shoulder and underarm seams meet, and mark the points at opposite sides of armhole; between these points on the top of the armhole place the fulness of the sleeve. Hold waist on table with wrong side and lower part of armhole toward you; *place sleeve* so that the seam comes to the point marked for it; then pin sleeve in as far as it should be plain, but ease sleeve so that armhole will not be tight. By holding waist in this position, the sleeve will shape itself to the lower part of the armhole. Then gather sleeve between points indicated on armhole, using two rows of gathers, one on the traced line, the other one-quarter inch below it on the sleeve (this row is taken out when waist is finished). Adjust fulness, (holding armhole in same position), so that the greatest amount comes on top of the shoulder. Baste with small stitches.

Second Fitting of Waist.—See that all alterations have carried out what was intended. Look over sleeve. See that the straight grain of the material falls from the bone at the shoulder; if it draws forward or backward, rip and adjust the gathers. Notice the armhole line; correct line if not good. If the sleeve is too long, pin a tuck across it above or below the elbow, as need may be. If too full, rip part way at shoulder and pin tuck lengthwise to remove extra

fulness. Notice the length and depth of the cuff, which are governed by individual taste.

Neck Band.—See that the neck line as marked by the lower edge of the band is in good line, and that the band sets easily about the neck and is not too deep.

Make all corrections on paper pattern.

Irregularities in figure may be taken account of in the second fitting, making additional correction for the side which needs it.

PATTERNS FOR UNDERGARMENTS DESIGNED FROM DRAFTED PATTERNS

Corset Cover Pattern.—Directions are here given for designing a corset cover pattern from a drafted shirtwaist pattern (Fig. 40). No other measures are necessary than those already used in drafting the shirtwaist pattern.

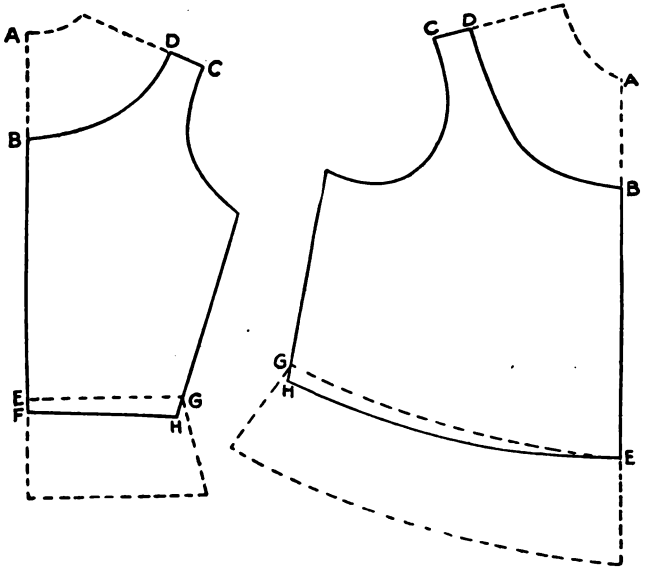


FIG. 40.—Corset cover pattern designed from drafted shirtwaist pattern.

Corset Cover Pattern (Fig. 40).—*To design from Drafted Shirtwaist Pattern.*—Place the back and front of the pattern on a sheet of paper, so that the center back is on one edge, the center front on the opposite edge.

Back

AB equals one-half neck measure minus two inches.
CD equals one-quarter shoulder line.
BD equals neck curve.
EF equals one-half inch.
GH equals three-quarter inch.
FH equals new waist line.

Front

AB equals one-half neck measure minus two inches.
CD equals one-quarter shoulder line.
GH equals three-quarter inch.
EH equals new waist line.

Trace Pattern.—Centre back, centre front, waist, neck, armhole and underarm lines. Cut pattern out on tracing. Patterns can also be developed from commercial patterns in the same way.

Drafted Peplum for Corset Cover (Fig. 41).—A draft for a peplum is given below. If desired, the same can be used for yoke pattern for skirt or drawers, using any depth desired.

Measures Required	*Practice*
Waist	24 inches
Depth of Peplum ...	4 inches
To Draft Peplum ...	8 inches

AX equals line of indefinite length.
AB equals one-third of waist measure.
BC equals curve for waist (use *AB* as radius to swing curve about one-quarter circle).
BD equals one-half waist measure on *BC*.
BE equals depth of peplum, four inches.
ADF equals radius, equals *AE*.
EF equals curve for lower edge (*AE* as radius).
BE equals lengthwise thread of goods in cutting.

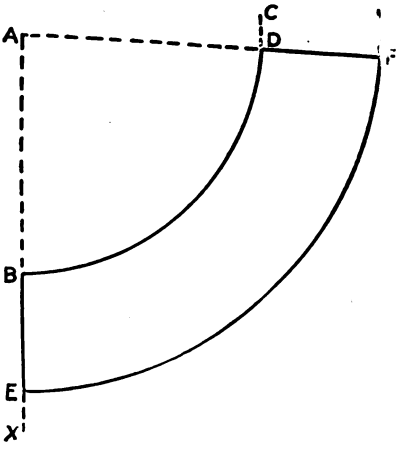


Fig. 41.—Draft of peplum pattern.

Night-gown Pattern Designed from Shirtwaist Pattern.—The method of designing a night-dress pattern from a drafted shirtwaist pattern is also explained and illustrated (Fig. 42). The break

in the illustration was made to preserve the correct slant of the lines and the width of the gown at the bottom, in the space allotted to the diagram.

Measures Required

Length of back, bone in neck to floor.
Length of front, hollow of neck to floor.
Desired width at bottom.

Place the back and front of the pattern on a sheet of drafting paper, so that the centre back and the centre front are parallel with the edge of the paper.

Back

AB equals length from the bone in neck to the floor.
AC equals one-half neck measure minus two inches.
DE equals one-third shoulder line.
FG equals one-half inch.
GH equals one-half inch (extend armhole line).
BI equals desired width at bottom (should be a little narrower than front).
HI equals side seam.
K equals point on *HI* opposite end of waist line.
KL equals one-half inch.
KM equals waist line.
LJ equals *MB*.
HLS equals side seam (new, curved line).

Front

AB equals length of front from hollow of neck to floor.
AC equals one-half neck measure minus two inches.
DE equals one-third shoulder line.
FG equals one-half inch.
GH equals one-half inch (extend armhole).
BI equals desired width at bottom (should be wider than back).
HI equals side seam.
HJ equals *HJ* of back.
K equals point on *HJ* opposite end of waist line.
KL equals one-half inch.
HLJ equals side seam (new, curved line).

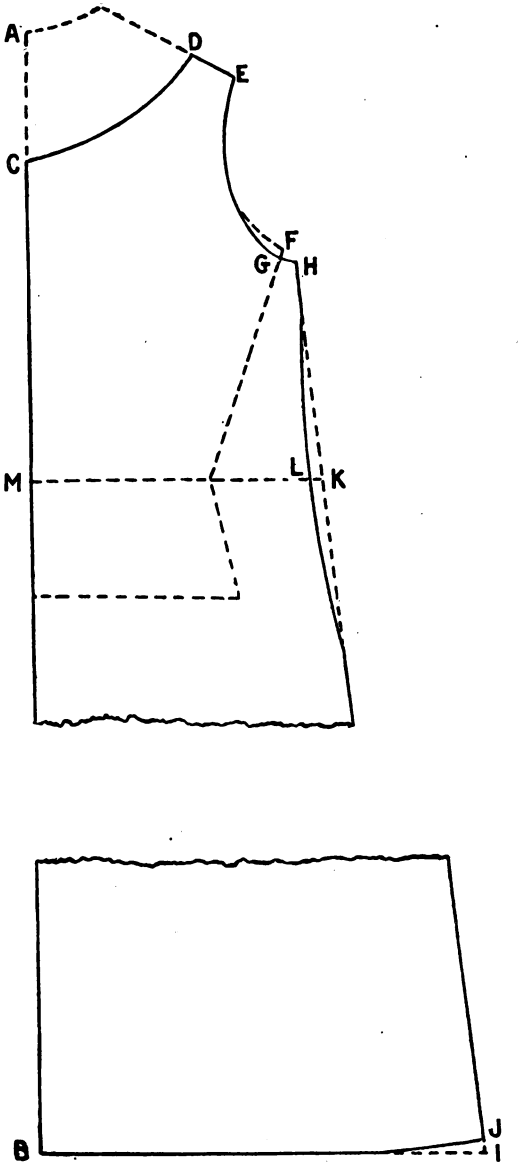


FIG. 42.—Night-gown pattern designed from drafted shirtwaist pattern (*Back*).

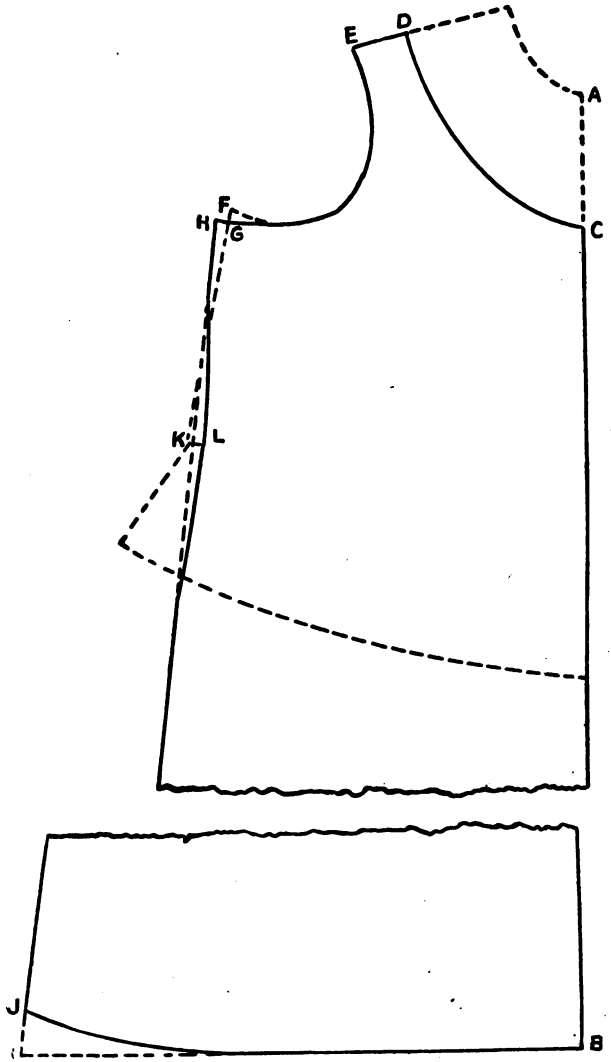


FIG. 42*a*.—Night-gown pattern designed from drafted shirtwaist pattern (*Front*).

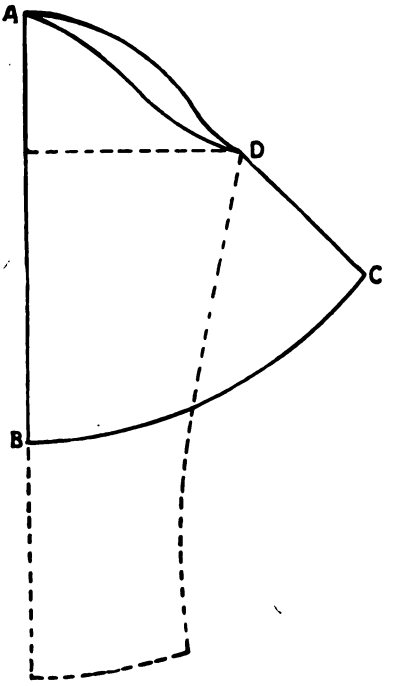


FIG. 43.—Circular night-gown designed from shirtwaist sleeve pattern.

Circular Night-gown Sleeve (Fig. 43)

(Designed from shirtwaist sleeve pattern.)

AB equals desired length, measured from the bone in top of shoulder.
BC equals curve for bottom; use *A* as pivot, *AB* as radius to swing curve, any desired width.
CD equals seam of sleeve.

Night-gown Sleeve Gathered into Band at Lower Edge (Fig. 44)

(Designed from shirtwaist sleeve pattern.)

AB equals desired length measured from bone in top of shoulder.
BC equals one inch.
CD equals dotted line (one-half width of sleeve at top plus one to two inches) at right angles to *AB*.
DE equals seam of sleeve.

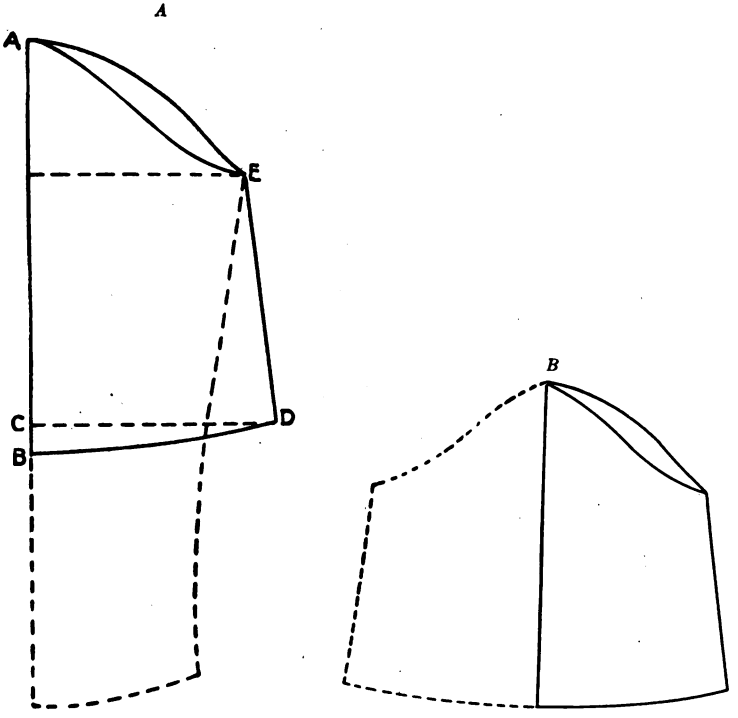


FIG. 44.—Straight night-gown sleeve; *A*, sleeve pattern designed from drafted shirtwaist pattern; *B*, sleeve pattern open.

SUGGESTIVE QUESTIONS

1. What measures should be taken to draft a shirtwaist and sleeve pattern?
2. Can you explain the reason for each measure? Tell the method of taking them?
3. Trace a relationship in the measures, the construction lines, to the pattern and the figure for which drafted.
4. What lines in the pattern does the width of back measure affect? The bust measure?
5. For what kinds of garments can this pattern be used to cut?
6. For what reason do we test drafted and commercial patterns by cutting in cheap material and fitting.
7. What two reasons can you give for using a tested shirtwaist pattern to cut a night-gown and corset cover, rather than a drafted or commercial pattern for the same?

CHAPTER VI

PATTERN MAKING: MANNISH SHIRT AND MIDDY BLOUSE

Mannish Shirt.—This pattern is for a strictly tailored garment built on the lines of a man's shirt, adapted to the measures and construction lines of the shirtwaist pattern. The shirt is much fuller throughout than the shirtwaist, to provide for which add six inches to the bust measure before drafting. The width of the back, front, length of shoulder, and size of armhole are proportionately increased by the method of the draft. If desired, the underarm seam can be drafted perfectly straight instead of sloping toward the centre back at waist.

Draft a Mannish shirt pattern from the following directions, using diagram, Fig. 45, as a guide in drafting.

Measures Required	*Standard*
Length of back	15½ inches
Length of front	16 inches
Length of underarm	8 inches
Bust .....38 plus 6 inches equals	44 inches
Waist	26 inches
Neck	13½ inches
Width of back	13½ inches
Width of front	14 inches

Sleeve

Length (minus depth of cuff)	16½ inches
Armhole	16 inches
Around upper arm	11½ inches
Around hand	8 inches

TO DRAFT SHIRT

Back (Fig. 45)

AA equals line of indefinite length.
AB equals length of back.
BB equals construction line, two-thirds of *AA*.
AC equals one-half of *AB*.
CC equals construction line, equals *AA*.
AD equals one-half of *AC*.
DD equals construction line, equals *AA*.
AE equals one-sixth of neck measure.
EF equals three-quarter inch.

DG equals one-half width of back plus three-quarter inch.
GH equals *AE*.
HI equals three-quarter inch.
FI equals shoulder line.
CJ equals one-quarter increased bust measure minus two inches.
BK equals one-quarter waist measure plus one and one-quarter inches.
KK^1 equals one-quarter inch.
BK^1 equals waist line.
KL equals underarm measure from K^1, ruler touching *J*.
KM equals four-inch ruler on *FKM*.
BN equals four inches.

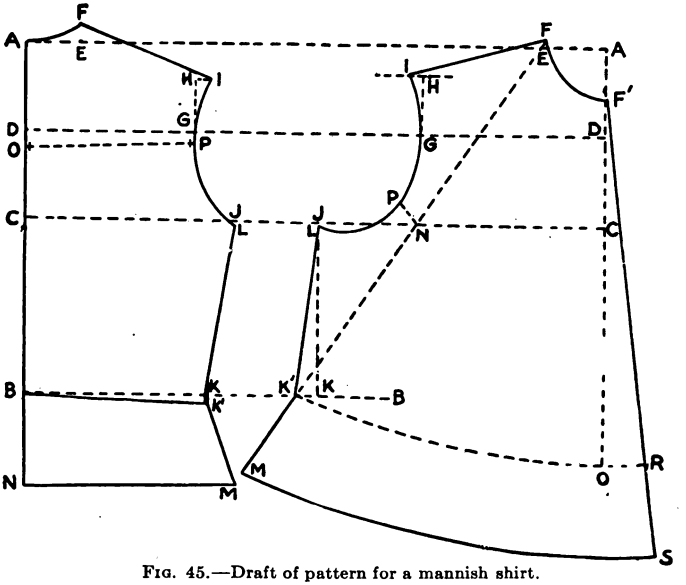


FIG. 45.—Draft of pattern for a mannish shirt.

NM equals bottom of shirt.
DO equals three-quarter inch.
GP equals three-eighth inch.
OP equals line of yoke.

Front (Fig. 44)

AE equals one-sixth neck measure plus three-eighth inch.
EF equals one-quarter inch.
AF^1 equals one-sixth neck measure.
DG equals one-half width of front plus one and one-quarter inches.
GH equals two-thirds *DA* (draw dotted line to left of *H*).
FI equals ruler on *F*, shoulder measure touching *I*).

CJ equals one-half increased bust measure minus *CJ* of the back.
JK equals dotted line.
KK^1 equals one inch.
K^1*L* equals under arm measure touching *K*^{1} and *J*.
K^1*M* equals four-inch ruler on *F* and *K*^{1}.
N equals intersections of *CJ*, ruler on *F* and *K*^{1}.
F^1*O* equals length of front.
NP equals one-half-inch ruler on *N* and *O*.
IPL equals armhole.
OR equals one and three-quarter inches.
RS equals four-inch ruler on *F*^{1} and *R*.
MS equals lower edge of shirt.

Shirt Sleeve (Fig. 46*A*)

AB equals line of indefinite length (in centre of paper).
AC equals one-quarter armhole (measure on shirtwaist draft).
CD equals inside length of sleeve minus depth of cuff.
CE equals one-half width at top.
EE^1 equals one-half inch.
EF equals three-quarter inch.
AF equals dotted line.
G equals one-half of *AF*.
GH equals line at right angles to *AF* intersecting *CE* (point of intersection *I*).
IJ equals three inches.
AF equals curve for top of under sleeve (using *J* as pivot, *JA* as radius, to swing curve from *A* to *K*.
FK equals two inches along curve.
KE^1 equals reverse curve to complete top of under sleeve.
GL equals one inch.
EM equals one and one-quarter inches.
EN equals three and one-quarter inches.
ALNME^1 equals curve for top of upper sleeve.
DO equals hand measure plus fulness desired.
DP equals one-half of *DO*.
PS equals three-eighth inch.
PR equals three-eighth inch.
DSO equals bottom of under sleeve.
DRO equals bottom of upper sleeve.
ST equals placket opening four and one-half-inch cut on under sleeve.

Fold paper on line *AD* and crease; trace outline of upper sleeve, and cut around pattern.

Collar Band (*Turn Down Collar*) (Fig. 46*A*)

AB equals neck measure plus one and one-half inches.
AD equals height of collar.
ABCD equals rectangle.
AE equals one-half of *AB*.
BF equals one-third of *BE*.
AG equals one-third of *AE*.

AH equals one-quarter inch.
BI equals one-quarter inch.
HGEFI equals lower edge of band.
DJ equals one and three-quarter inches.
CK equals five-eighth inch.
KI equals end of band.
DE equals dotted line.
DI equals one-half inch.
HIJ equals curve for end of band.
EL equals centre of band.
LM equals five and one-half inches (notch for matching parts).
LN equals five and one-half inches (notch for matching parts).
EO equals five-eighth inch, equals buttonhole.
OP equals one-half neck measure—outer end of buttonhole.
OR equals one-half neck measure—outer end of buttonhole.
GF equals lengthwise thread of goods in cutting.

Collar (*Turn Down*) (Fig. 46*B*)

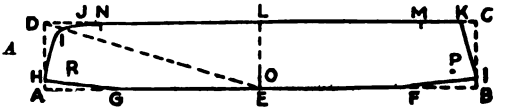
AB equals one-half neck measure.
BC equals desired height of collar.
ABCD equals rectangle.
AE equals one inch.
AF equals one and three-quarter inches.
DG equals one-quarter inch.
GFE equals curve for corner of collar.
CH equals five and one-half inches (notch for matching parts).
CB equals lengthwise fold.

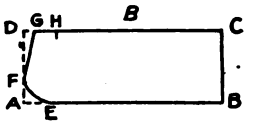
French or Turn Back Cuff (Fig. 46*C*)

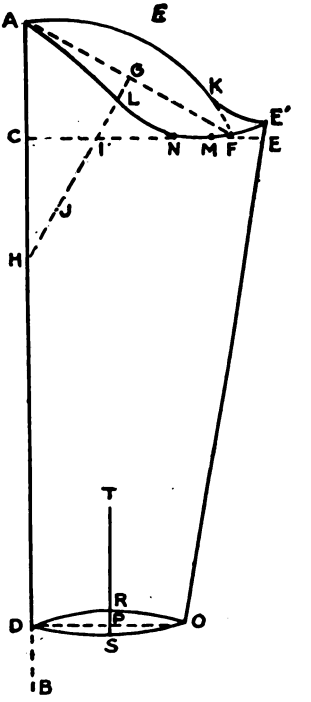
AB equals hand measure plus one and one-half to two inches.
BC equals twice finished depth of cuff.
ABCD equals rectangle.
EF equals one-half depth of cuff (line for fold).
DC equals lengthwise thread of goods.

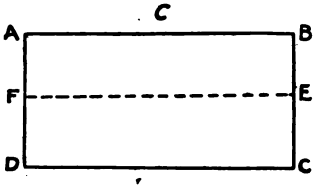
Pocket (Fig. 46*D*)

AB equals four and one-half inches.
BC equals five and one-half inches.
ABCD equals rectangle.
AE equals one and three-eighth inches.
BF equals one and three-eighth inches.
EF equals line for hem at top.
CG equals two and three-quarter inches.
CH equals one inch.
HI equals one-quarter inch.
DJ equals one inch.
JK equals one-quarter inch.
AL equals two inches.
ELK equals side of pocket.
BM equals one and one-half inches.
FMI equals side of pocket.
KGI equals lower edge of pocket.









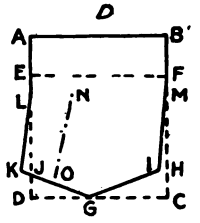


FIG. 46.—Draft of pattern for shirt sleeve, collarband, collar, cuff and pocket.

KO equals one and one-eighth inches.
LN equals one and three-eighth inches.
NO equals — . — . — . line for placing on lengthwise thread of goods.

Middy Blouse Pattern (Fig. 173).—The middy blouse being a garment to be worn for sports and gymnasium work, should be of the easiest fit. Do not increase the bust measure as this draft

provides for all necessary increase in measures. The pattern is built upon some of the construction lines for a shirtwaist, using the same measures.

Middy Blouse (Fig. 47)

Measures Required	*Standard*
Length of back (to waist line)	15 inches
Full length (ten to twelve inches more than length of back)	27 inches
Bust	38 inches

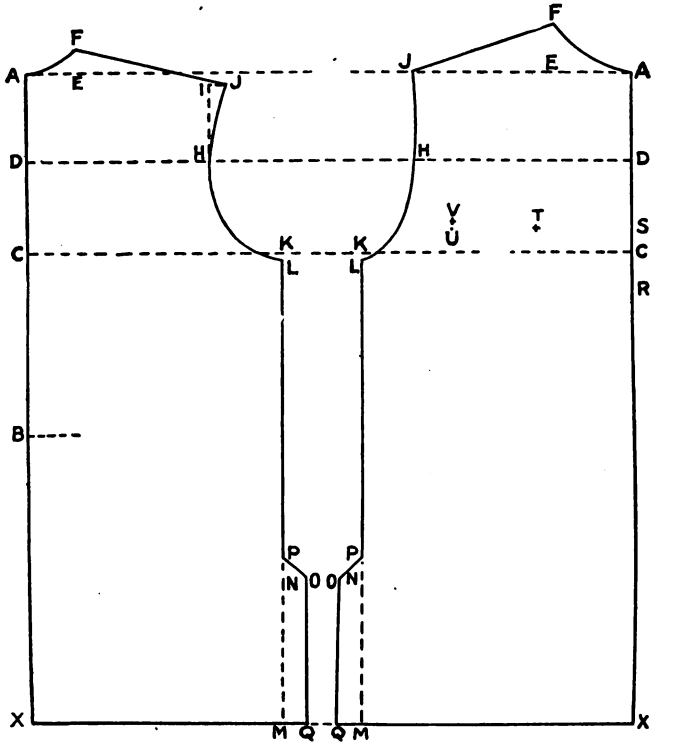


FIG. 47.—Draft of pattern for middy blouse.

Neck	13½ inches
Width of back	13 inches
Width of front	13½ inches
Armhole	14 inches
Length of sleeve (inside length minus one inch)	19 inches
Hand measure	8 inches

TO DRAFT BLOUSE

Back (Fig. 47)

AX equals full length.
AA equals construction line (indefinite length).
XX equals line for lower edge of middy.
AB equals length of back (to waist; short line).
AC equals one-half of *AB*.
CC equals construction line.
AD equals one-half of *AC*.
DD equals construction line.
AE equals one-sixth neck measure.
EF equals one inch.
AF equals neck curve.
DH equals one-half width of back plus one inch.
HI equals *AD* minus one-half inch.
IJ equals three-quarter inch.
CK equals one-quarter bust measure plus one inch.
KL equals one-quarter inch.
LM equals underarm line, at right angles to *CC*.
MP equals height of opening (five to six inches).
PN equals one inch.
NO equals one inch.
POQ equals hem of hip opening.

Front (Fig. 47)

AX equals full length.
AE equals one-sixth neck measure plus one inch.
EF equals two inches.
FJ equals end of ruler on *F* and length of back shoulder measure touching *AA*.
DH equals one-half width of front plus two and one-quarter inches.
CK equals *DH* plus two and one-half inches.
KL equals one-quarter inch.
LM equals underarm seam, at right angles to *CC*.
MP equals height of opening (five to six inches).
PN equals one inch.
NO equals one inch.
POQ equals hem of hip opening.
AR equals depth of front opening (nine to ten inches).
CS equals one inch.
ST equals one-third *CK*.
TU equals three and one-half inches.
UV equals one-quarter inch.
TV equals points for placing pockets.

Sleeve (Fig. 48)

AB equals inside length of sleeve plus four inches.
AC equals four inches.
CD equals one-half armhole plus one inch.
AD equals dotted line.

AE equals two inches.
EF equals one-half inch.
AFD equals top of sleeve.
BG equals *CD* minus one and one-half inches.
DG equals (dotted line).
DH equals one-half of *DG*.
HI equals one-quarter inch.
DIG equals inside seam of sleeve.
CJ equals depth of opening.
JK equals one-inch extension.
GL equals one-inch extension.
KL equals line of extension.

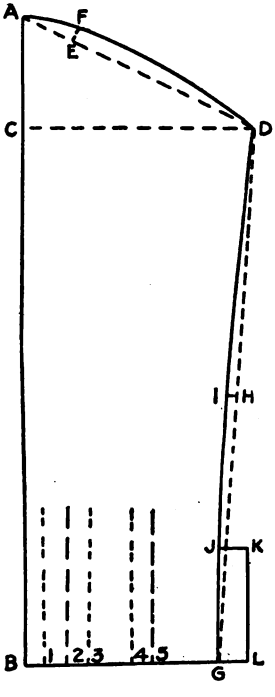


Fig. 48.—Draft of pattern for middy blouse sleeve.

Points for Tucks

1. Three-quarter inch from fold of sleeve.
2. Three-quarter inch from 1.
3. Three-quarter inch from 2.
4. One and one-half inches from 3.
5. Three-quarter inch from 4.

Project from each of these points, a vertical line five and one-half inches long.

Collar (Fig. 49*A*)

AB equals ten inches.
AC equals one half neck measure plus one-quarter inch.
CD equals one and one-half inches.

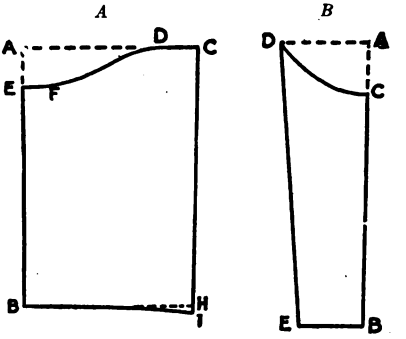


Fig. 49.—Draft of pattern for *A*, middy blouse collar; *B*, middy blouse facing.

AC equals one and one-half inches.
EF equals one inch.
EFDC equals neck line (curve carefully).
BH equals one-half neck measure.
HI equals one-quarter inch.
CI equals side of collar.
BI equals bottom of collar.

Facing (Fig. 49*B*)

AB equals five inches longer than opening of middy.
AC equals two inches.
AD equals one-sixth of neck measure plus one inch.
AC equals curve.
BE equals two and one-half inches.
DE equals edge of facing.

Shield (Fig. 50*A*)

AB equals length of shield.
AC equals one-sixth of neck measure.
CD equals one-sixth of neck measure.
DE equals two inches.
CF equals one-sixth of neck measure plus one inch.
ADF equals neck curve.
ADG equals one-half neck measure on *ADF*.
GH equals two inches at right angles to neck curve.
BI equals two and one-half inches.
IEH equals outer edge of shield.

Pocket (Fig. 50*B*)

AB equals three and three-quarter inches.
BC equals five inches.
ABCD equals rectangle.
BE equals one-quarter inch.
EF equals one-quarter inch.
AH equals one-eighth inch.
Connect *HE*.
AI equals one and one-half inches.
EG equals one and one-half inches.
Connect *FG*.
Connect *IG* (line for fold).
Connect *EG*.
DJ equals one and one-half inch curve.
DK equals one and one-quarter inch curve.
CL equals two-inch curve.
CM equals two-inch curve.

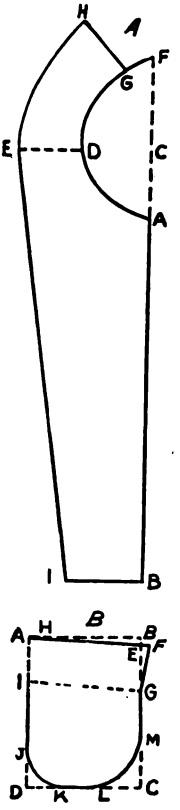


FIG. 50. — Draft of pattern for *A*, middy blouse shield; *B*, middy blouse pocket.

SUGGESTIVE QUESTIONS.

1. Name three points of difference between the mannish shirt and the shirtwaist, which you have found in drafting patterns for them.
2. In what way does the increased bust measure affect the lines of the pattern compared with a shirtwaist pattern?
3. Why is one section of the collar drafted longer than the other? What is a French cuff?
4. In what points is the middy blouse similar to the mannish shirt? How different?
5. How would you design a yoke for a middy blouse, if the pattern has no yoke?

CHAPTER VII

PATTERN MAKING: SKIRTS AND UNDERGARMENTS

Skirt Patterns.—Various types of skirts may be called to mind, wide and narrow, plain and gored, plaited and gathered. The plain skirt is made up of several straight widths of material joined together, the fulness at the waist taken out in plaits or gathers. For this, no pattern is necessary. The gored skirt, of whatever type, may be developed from a circular foundation pattern, the drafting of which is to be the first problem in skirt pattern making.

Circular Foundation Skirt Pattern.—In Fig. 33 is shown a form upon which lines are drawn to illustrate some points which need to be fully understood at the outset, and never lost sight of in working with skirt patterns.

1. The tape drawn around the waist indicates the normal waist line. (Tape must always be so placed around the figure when taking measures.) It also indicates a measure to be taken, the waist, a snug measure.

2. The tape below this drawn round the fullest part of the form, indicates the hip line. The point at which this measure is taken varies with different figures. On very slight ones it may be only five inches below waist, on others as much as seven inches. An easy measure should be taken here, so that skirt will be large enough to meet around the figure.

3. Notice that the hip line runs parallel to the floor, but is not the same distance from the waist line at all points. Note the point at which it is farthest from the waist line, just over the round part of the hip. A measure should be taken here from the bottom of waist tape to bottom of hip tape. This is called the hip depth.

4. Three other lines are shown, these extending from the bottom of the waist tape to the floor, one in center front, one over the highest part of the hip, the other in the center back. These indicate that three length measures must be taken. In taking these measures, they will be found to vary, the center front being shorter than the hip length, and the center back either longer or shorter than the hip length.

Remember this point, and also that the hip line runs parallel to the floor. These will be of service later on. One other measure not indicated in the illustration is the width around the bottom of the skirt. It is not necessary to take this measure. It is determined by individual taste as that is affected by the prevailing style. It is well, however, to base it upon some proportion of the hip measure. This varies from one and a half to three or more times the hip measure. One must judge by the average skirt of the time. For drafting purposes at present it will be considered two and one-quarter times the hip.

Review the measures needed to draft a circular foundation skirt.

1. Waist (snug).
2. Hip (4½–7 inches below waist around fullest part, over bone in hip easy measure).
3. Hip depth (bottom waist tape to bottom hip tape).
4. Length; front, hip, back.
5. Width around bottom.

Draft a circular skirt pattern from standard measure, according to the directions given below, using diagram, Fig. 51, as guide for drafting.

Circular Foundation Skirt (Fig. 51)

Measures Required	*Standard*
Waist	26 inches
Hip	40 inches
Hip depth	6½ inches
Length front	40 inches
Length over hip	41½ inches
Length back	41½ inches
Width around bottom	

TO DRAFT SKIRT

AB equals one-half hip measure minus one-eighth of one-half width around bottom.

AC equals one-tenth of one-half width around bottom.

CD equals one-half of *AB*.

DE equals the difference between center front length and length over hip, straight up from *D*.

CEB equals waist line.

EF equals hip depth at right angle to waist line minus one-half inch.

NOTE.—If there is much difference between the center front and hip lengths, deduct three-quarter to one inch from hip depth.

CG equals hip depth marked on center front minus the difference between front and hip lengths of skirt.

BH equals hip depth, center back, point of square at *B*.

GFI equals hip line one-half hip measure passing through *H*.
CJ equals length of front, draw line.
JKL equals line of indefinite length, for bottom of skirt, secured by placing end of tape measure at hip line and measuring down at frequent intervals, the same distance as *GJ*.
JM equals one-half width around bottom.
MIN equals center back line, ruler touching *M* and *I*. (If there is a difference in the length over hip and center back, raise or lower *N* to account for the difference.)

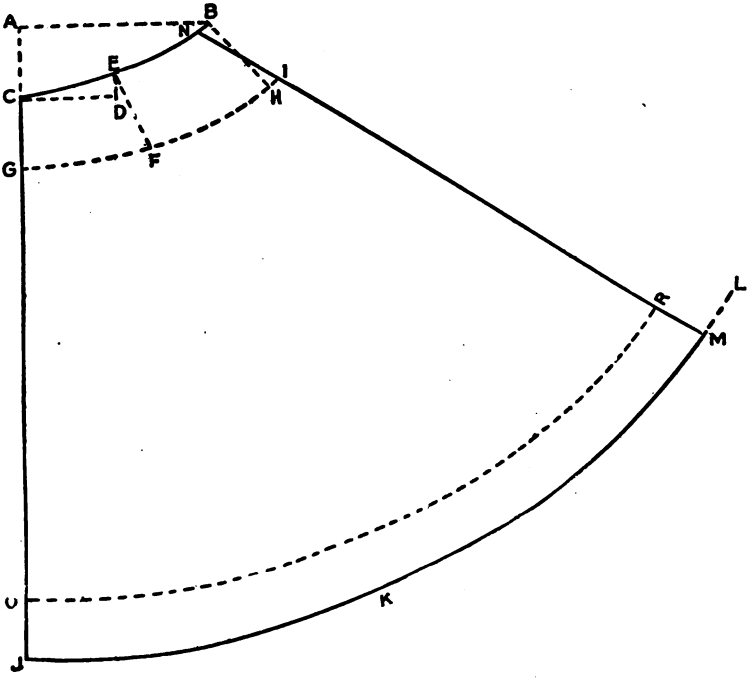


FIG. 51.—Draft of pattern for circular foundation skirt.

JO equals two to four inches.
KP equals two to four inches.
MR equals two to four inches.
OPR equals finishing line of skirt (desired distance from floor).

NOTE.—When drafting narrow skirts (two yards or less), take an easy measure around the fullest part of the thigh, twelve inches below waist. Use this to test the pattern at points four to six inches below the hip line. If the width of the skirt falls short at this point, it must be corrected by increasing hip measure.

When pattern has been corrected, practice taking someone else's

measures, and when these have been verified, draft to your own measures, a full size circular skirt pattern.

Gored Skirt Patterns Designed on Circular Foundation.—The circular skirt pattern which you have learned to draft may be divided into as many parts or gores as desired, two to fifteen, as the case may be. Naturally, narrow skirts will not admit of as many

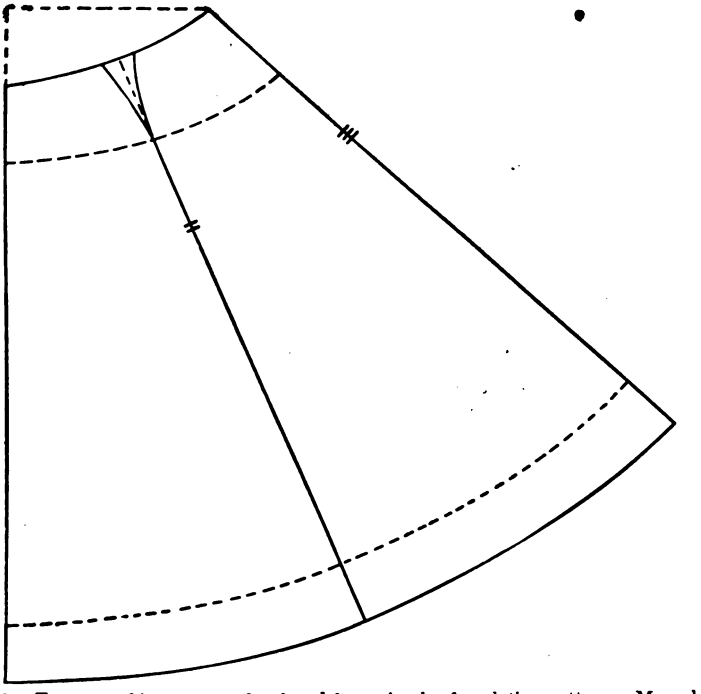


FIG. 52.—Two-gore skirt pattern, developed from circular foundation pattern. May also be used as three- or four-gore pattern.

divisions as wide ones. The method of developing numerous types of plain gored skirts from the circular pattern is fully explained.

Divisions Are Not Arbitrary.—As the width of the bottom of the circular skirt may be as flexible as you wish, so may the division of the gores vary with the changing fashions. One needs only to study the mode of the day, and build the skirt accordingly, as wide or narrow as may conform to the lines of one's figure.

Directions follow for making a number of divisions into gores.

Two-gore Skirt (Fig. 52).—The simplest division of a circular

skirt would make of it a two-piece skirt, with seams over the hip, the center front and back placed on a lengthwise fold of the goods when cutting.

To Make Divisions.—Measure on hip lines from center front, one-quarter hip measure minus one inch.

At bottom, from center front, one-quarter width at bottom, minus one to two inches. Connect points just made with straight line, extending it to waist line. This becomes line for hip seam.

Dart.—Measure waist line. Deduct one-half waist measure from this amount, the remainder to be taken out in a dart over the hip. Take part from each side of the hip seam at the waist line, taking more from the back of the front piece than from the back.

Trace guide lines for joining seams together; also indicate how pattern is to be placed on material, *i.e.*, mark center front, on lengthwise fold; also center back.

Three-gore Skirt (Fig. 52).—*Division as Follows.*—Same as for two-piece skirt, but which allows two ways of cutting.

1. Center front on fold, and front edge of back lengthwise of material, having bias seam in the center back.

2. Center back on fold and center front with tuck opening or slot seam.

Darts.—Remove fulness at waist line same as two-piece skirt.

Mark guide lines for seam joining and correct placing on material.

Finishing Line.—Mark same as circular skirt, any desired height from floor.

Four-gore Skirt.—*Divisions as Follows:* 1. Four-gore, Fig. 52, which allows for cutting with seams (straight or bias) in center front and centre back, as well as on hips.

2. *Panel Front and Back* (Fig. 53).—Measure from center front on hip line, one-twelfth of hip measure; at the bottom, twice the amount at hip. Connect these points with straight line, letting it extend to waist line. Measure from center back on hip line and at bottom in the same way and connect points with straight line to form panel. The side gore is the remaining space between the panels.

Darts.—Remove extra fullness at waist, taking darts from panels and side gore in the following way:

Back of front panel, one-quarter inch.

Front of side gore, one-quarter to three-quarter inch.

Front of back panel, one-quarter inch.

Back of side gore, three-quarter to one inch.

Subtract amount taken in these darts from amount to be taken out of waist measure of pattern. Take the remainder out of center of side gore at waist line, sloping to center of hip line.

Mark guide lines for seam joining and directions for correct placing on material.

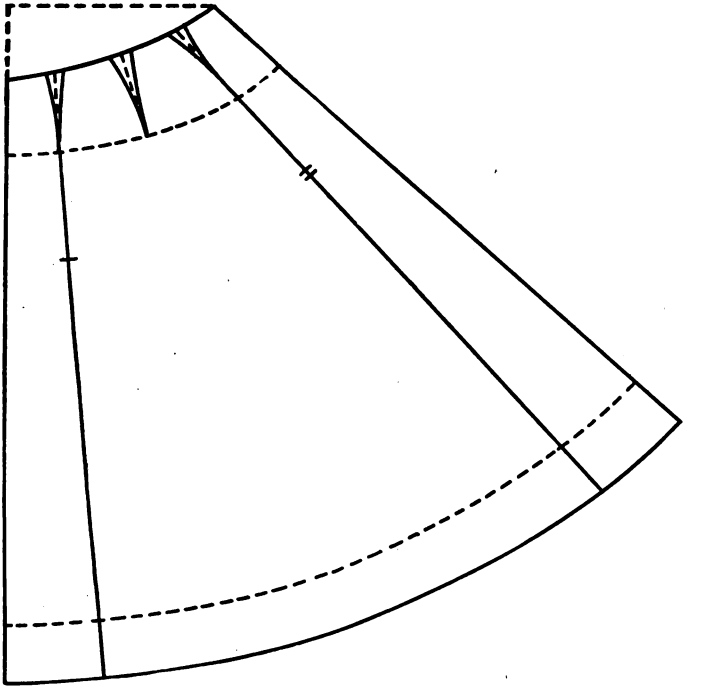


FIG. 53.—Four-gore skirt pattern, having panel front and back, developed from a circular foundation pattern.

Finishing Line.—Same as in circular skirt, any desired height from floor.

Five-gore Skirt (Figs. 54 and 55).—Either of two divisions may be made for this skirt, as follows:

To Make Divisions (Fig. 54).—1. *Skirt with Panel Back and Front Opening Under a Tuck. Back,* measure one-tenth of hip from center back, on hip line, and twice this amount at bottom.

Side and Front Gore.—Find center of *whole* hip, move point forward three-quarter inch; at bottom, find one-half remainder of bottom line after taking panel off. Connect these points with straight line, continuing to waist line.

High Waist Line.—Fig. 5 shows method of allowing for high waist line, drawing lines straight up from waist line unless more than two inches, when they should curve out slightly to allow for

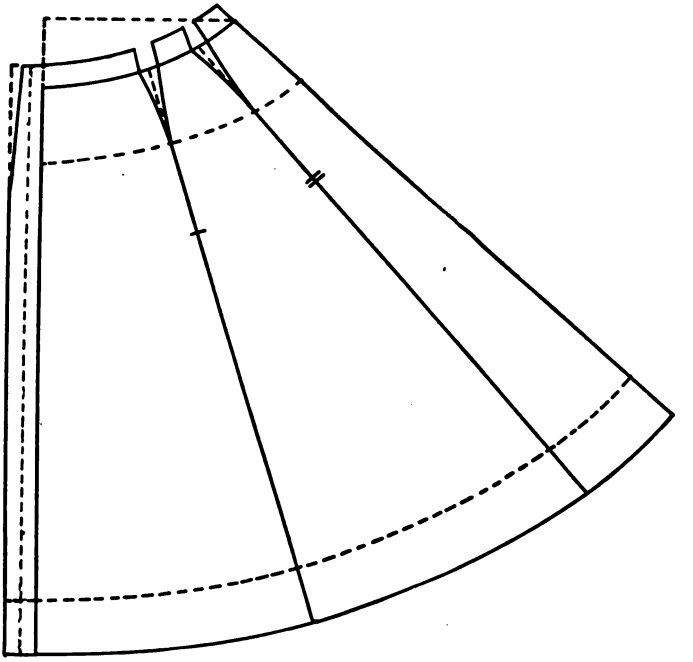


FIG. 54.—Five-gored skirt pattern, panel back, two side- and two front-gores, developed from a circular foundation skirt pattern.

size of figure. Take one-quarter inch from front edge of tuck at top and run to nothing at hip line. This keeps edge of tuck straight. Dotted line in center of tuck allowance at top and bottom marks line for fold of tuck.

Darts.—Remove fulness at waist from front of panel, back of side gore and the balance from hip seam.

Mark guide lines for joining seams; place pattern on material as

follows: center front on selvedge allowing for tuck, front of side gore on lengthwise thread, and center of back on lengthwise fold.

Finishing Line.—Mark as far from floor as desired.

2. *Petticoat* (Fig. 55).—Panel front, two side gores and two narrow back gores. Four or six gores are sometimes used.

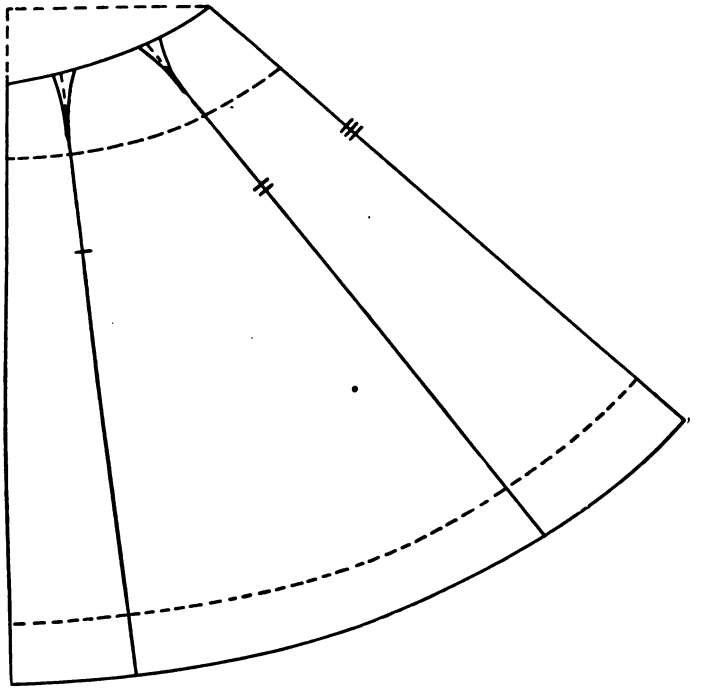


FIG. 55.—Five-gore skirt pattern, panel front, two side- and two back-gores, developed from circular foundation skirt pattern (petticoat).

To Draft Petticoat.—Draft circular skirt in usual way.

Gore Divisions: Front Panel.—Measure from center front on hip line one-tenth of hip measure, and at the bottom twice the measurement at the hip.

Back Gores.—Measure from center back, one-eighth the hip measure on hip line, and twice this amount at the bottom.

Side Gore.—Remainder after panel and back gore are taken off.

Darts.—Take extra fulness from front of back gore, both sides of side gore, and back of front gore.

DRAFT OF CIRCULAR FLOUNCE FOR PETTICOAT (Fig. 56)

Measures Required	*Practice*
1. Depth of flounce	12 inches
2. Width at top	72 inches
3. Width at bottom	112 inches

4. Radius for curve at top of flounce.

Depth of Flounce.—Decide on the best depth for the height of the figure.

Width at Top.—Fold petticoat through the center front and centre back; measure up from the bottom at several points, and mark with pins, the desired depth of the flounce. Measure from center front to center back, through these marks, to ascertain the width for top of flounce.

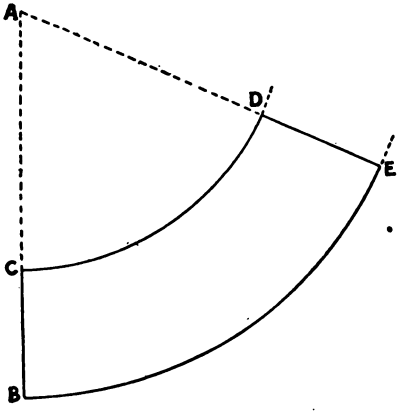


FIG. 56.—Draft of pattern for circular flounce for petticoats.

Width at Bottom.—Narrow dress skirts necessitate narrow petticoats, and *vice versa,* so the width of the flounce at the bottom will depend upon the prevailing fashion. It may vary from a few inches more than the bottom of the skirt to a half yard or more.

Radius (*Rule for Finding*).—Multiply the width of the flounce at the top by the depth; divide the product by the difference between the width at the top and bottom, the result being the radius for curve at top.

To Draft Flounce.—Draft perpendicular line of indefinite length.

AB equals radius plus depth of flounce (on perpendicular line).
BC equals depth of flounce.
AC equals radius.

With *A* as radius swing curve from *C* for top of flounce; another curve from *B* for bottom of flounce.

CD equals width at top.
BE equals width at bottom.

Sections.—The flounce may be broken up into as many sections as desired and joined with insertion or beading. The sides of these should radiate regularly from the top. The center of each section should be marked for placing on the lengthwise of the material.

Six-gore Skirt (Fig. 57).—*Panel,* front and back, and two side gores. This is one of the most useful and adaptable divisions of the circular skirt.

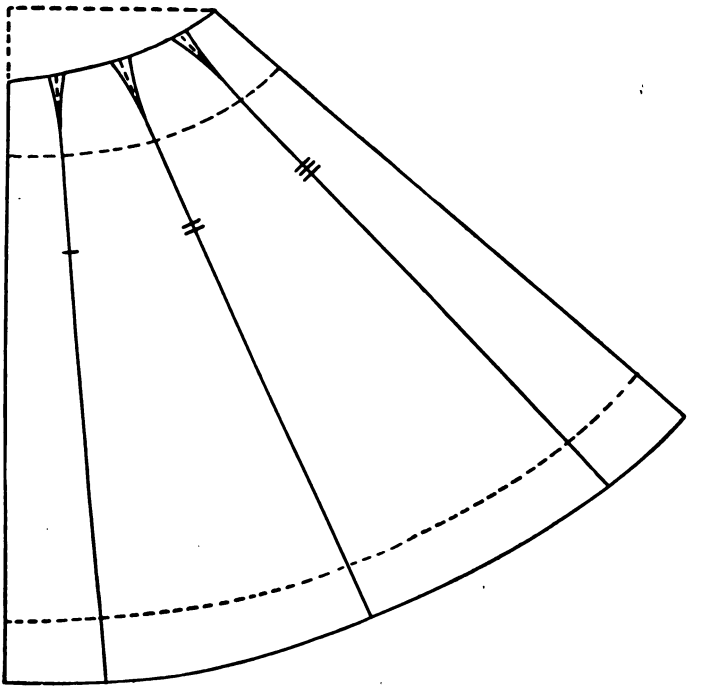


Fig. 57.—Side-gore skirt pattern, panel back and front and two side-gores, developed from a circular foundation skirt pattern.

To Make Divisions.—Front Panel, measure from center front one-twelfth hip measure on hip line. At the bottom, twice the amount at hip.

Back Gore or Panel, same as front.

Draw lines through points just measured, letting them extend to waist line. These form the seam lines of the panel or gores.

Side Gores.—At Hip, divide the remainder of the hip measure in half. At bottom, divide the remainder of the bottom in half. Connect these points, letting the line extend to the waist line.

Darts.—Measure waist line of pattern. Subtract one-half waist measure from this to find how much must be taken out in darts. Remove fulness at waist as follows:

Back of front gore, one-quarter inch.

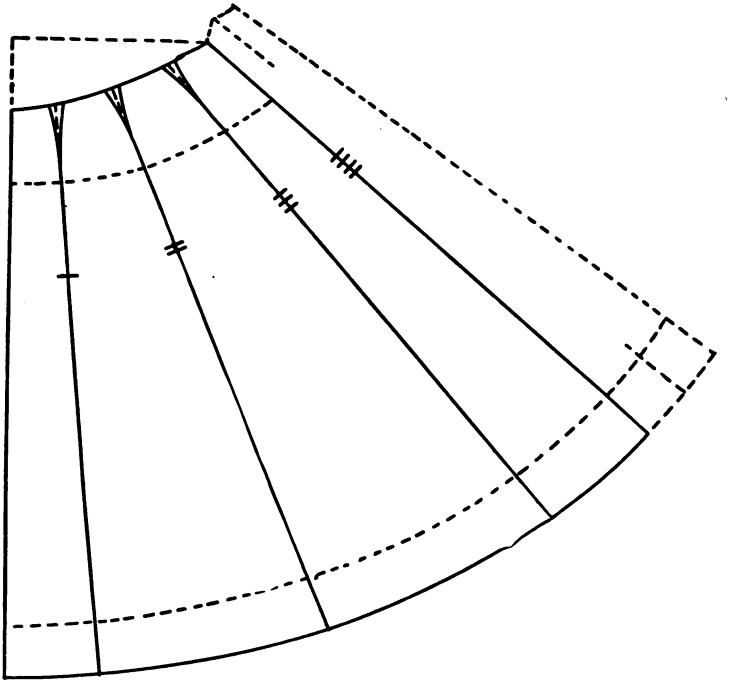


FIG. 58.—Seven-gore skirt pattern, panel front, two side- and one back-gore, with inverted plait, developed from a circular foundation skirt pattern.

Front of side gore, one-quarter to three-quarter inch.

Front of back gore, one-quarter inch.

Back of side gore, three-quarter to one inch.

Subtract from the amount on waist line of pattern what has already been taken out in darts. The remainder should be taken from the hip seam of the side gores, taking more from the back of the first gore than from the front of the second gore.

Mark guide lines for joining gores and directions for correct placing on material.

Finishing Line, as far from floor as desired.

Seven-gore Skirt (Fig. 58).—*Division for Gores: Front Panel.*—Measure on hip line from center front one-twelfth hip measure; at bottom, one and a half times the amount at hip.

Back Gore equals one inch more than front gore at hip, and at bottom one-third of the remainder minus two inches.

Side Gores.—Divide remainder of hip in half. Divide bottom in half. Connect points marked for seam lines, letting them extend to waist line.

Darts.—Remove fulness as in six-gored skirt.

Mark guide lines for joining gores and directions for correct placing on material.

Finishing Line.—Mark desired distance from floor.

Inverted Plait.—This plait is frequently added to a skirt having bias seam in center back. Add two to three inches at top of skirt, in center back, and twice that amount at the bottom. Fold plait to place and then cut top like top of skirt, to prevent its falling short at the top when garment is being made.

Godet, Organ-pipe, or Cartridge Plaits.—These are gores quite wide at the bottom and narrow at the top. Fig. 59*A*, cut with the center of the gore on the straight of the material. Sometimes two or more are set in the back of a skirt having a wide circular front or having a wide side gore. They add length to the figure as well as fulness at the foot. The seams are usually unpressed to make the plait seem round. They are only used when skirts are wide. The plait may be from two to four inches at top, and twelve to fifteen inches at bottom.

Umbrella Skirt.—Another treatment of gores which keeps the skirt close about the knees, but flaring around the feet, is shown in Fig. 59*B*. It is used in skirts having as many as seven or more gores. To secure this effect, measure in one-half to one inch at the knee length on each side of the gores, and draw line from the hip line, through this point, passing through another point twelve to fifteen inches from the bottom, and extend line to a point two to three inches beyond the side of the gore at the bottom.

Problem.—Correct circular skirt pattern already drafted to your own measure. Mark on it a six-gored division. Cut out all around

the outside of the pattern, ready for testing in cambric or muslin.

Testing Skirt Pattern.—Before cutting paper pattern apart on the gore lines, cut it out in cambrice or muslin as a circular skirt, tracing the gores and marking them with colored thread. In this way, you can test several skirts on the one foundation, simply ripping out the darts, removing bastings and tracing other lines.

To Cut Cambric Skirt.—Lay two cut ends of cambric together.

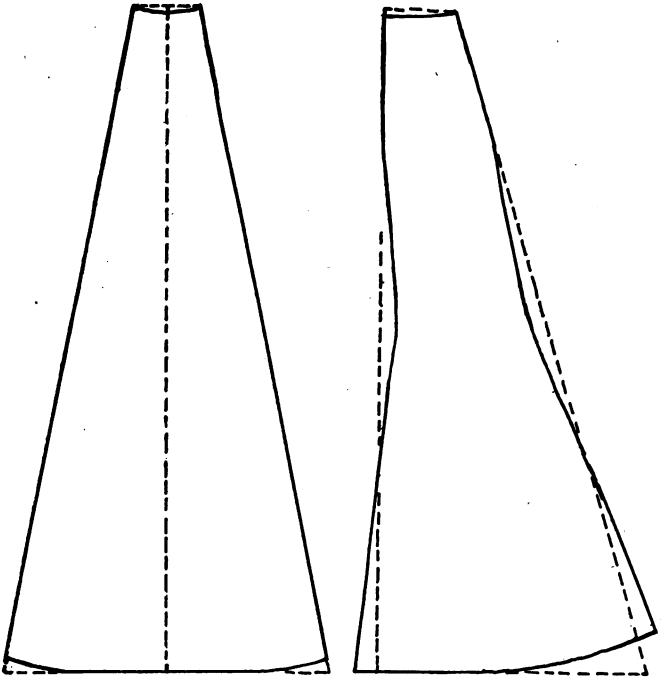


FIG. 59.—*A*, Godet or organ-pipe plait; *B*, gore of umbrella skirt.

Pin selvedge. Place broad end of the pattern to cut ends of the goods, center front three-quarters of an inch from selvedge. If cloth is narrow, piece on selvedge at back (Fig. 192). Allow two-inch center back, one-half inch at waist; nothing at bottom.

Cut out on seam allowance at top and center back and on edge of pattern at bottom.

Trace waist, hip and finishing lines, darts, seams and gores.

Mark waist, hip, finishing line and gores with colored thread.

To Baste for Fitting.—Pin seams, keeping traced lines together, hip and waist lines meeting. Baste darts with small stitches, beginning at point and continuing to waist line. Leave back seam open twelve to thirteen inches from top. Fold right hand side under, and baste. Mark with colored thread, line of seam on under side. Turn cloth up on finishing line and pin to skirt, with pins at right angles to edge.

To Fit Skirt.—Prepare belt of one-inch soft belting. Sew two hooks and eyes securely, so the ends of belt just come together. Have belt correct waist measure. Place belt on figure, fastening in center back. Put skirt on, seams inside, and pin at hip, center front, center back and sides to keep it in place. Then pin skirt to belt, easing it sufficiently to make it set smoothly at the hips. Pin placket together. Look skirt over carefully. Fit right hand side only. If the general width of the skirt pleases, notice the trend of the gore lines. See if the width of front gore or panel meets with your approval. If it seems too wide at the bottom in proportion to the hip, indicate by pins (stretching tape line from hip to bottom) just how much you would increase or decrease the width. Do the same with other gores and panel, until you are satisfied with the proportion. If too full at the waist, pin out in the darts, being careful to end dart well.

Hip Line.—Should the hip line not be parallel with the floor at all points, draw a tape around the figure, in even line, and re-draw hip line from center front to back on the side upon which alterations have been made. Glance at the bottom of the skirt; if the hip line was irregular, this will also need changing, but can be corrected by measuring from the new hip line when correcting the pattern. Never keep anyone standing for work that can be done in the hand.

These general rules for fitting, with a few additions, will apply to almost any type of skirt.

Fitting Gored Skirts.—Seam lines should be at right angles to the waist line, sloping slightly toward front, so as to give appearance of straight lines. In fitting it is sometimes necessary to take more from one gore than another. When possible, pin without ripping seam. Again it may be necessary to open seam, and re-pin to change the direction of the grain of the cloth. This occurs some-

times in a two-piece skirt. It may push toward the front too much, and if simply raised at the waist line in the back to correct this, will poke out at the bottom in the back. In this case, rip hip seam, raise front enough to bring grain into position, re-pin seam, keeping back gore on original line, and if necessary, take out fulness in seam below hip. Correct waist and hip lines. Strive for firm, unbroken seam lines, when fitting. Remember never to fit skirts close. There must be chance for working with the garment and stitching, and ease of fit after completion. Skirts that are good in line, but too tight all through, may be stitched outside bastings to give greater ease.

Circular Skirts.—Should there be a tendency to push forward in the front, raise the skirt at the waist line in the back. This may necessitate a change in the seam line of the centre back. In testing circular pattern if there is too much flare, it may be reduced by laying a plait below the hip. The reverse can be done if skirt is not full enough. Slash it and set a piece in the slash.

Alterations.—Trace alterations; open seam or darts and trace opposite side of skirt. Re-mark with colored cotton new waist, hip, or finishing lines. Correct paper pattern according to the alterations made.

PATTERNS FOR UNDERGARMENTS

Kimono Night-gown.—The draft of a kimono night-gown is here explained and illustrated (Fig. 60). The break in the illustration is made for the same reason explained on p. 102. This type of gown can be cut directly from the material if desired.

Measures Required	*Standard*
Length of gown (from highest point of shoulder to floor)	60 inches
Width of front plus length of sleeve	18 inches
Width at bottom (desired width)	90 inches

Kimono Night-gown

TO DRAFT GOWN (Fig. 60*A*)

AB equals length of gown (from highest point of shoulder to floor).
AC equals one-half armhole plus two inches.
AD equals four to five inches.
AE equals three to four inches.

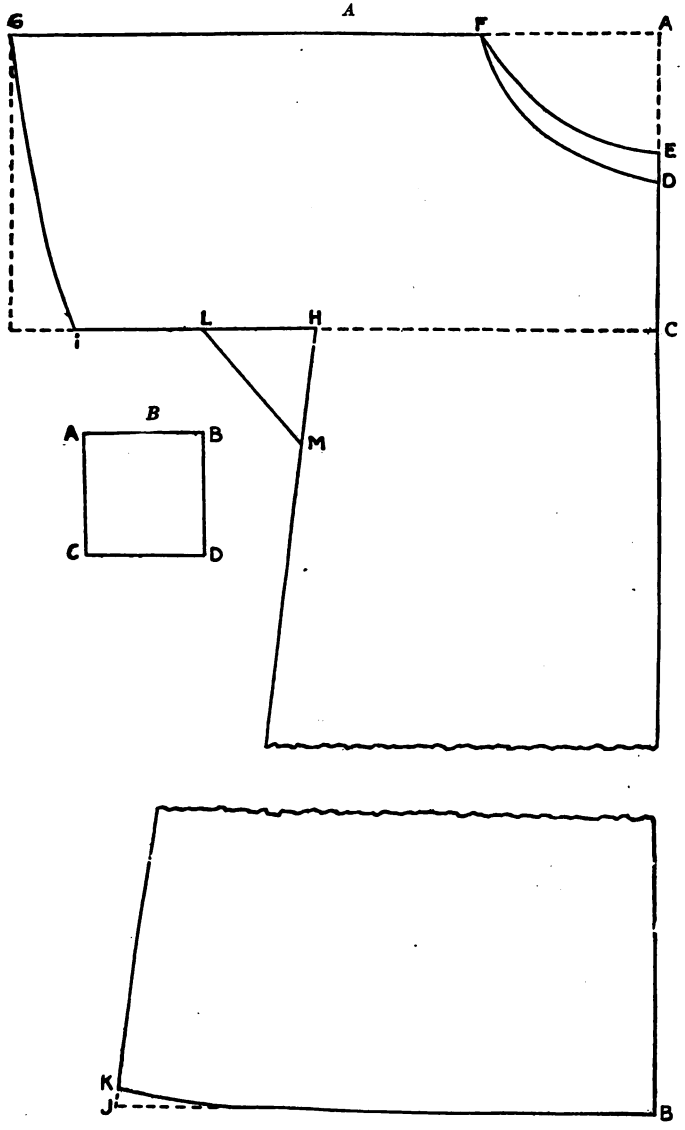


FIG. 60.—Draft of pattern for a kimono night-gown; *A*, gown; *B*, gusset.

AF equals five to six inches.
DF equals line for front neck.
EF equals line for back neck.
AG equals width of front plus desired length of sleeve.
CH equals one-quarter bust measure plus two inches.
HI equals desired depth of sleeve on inside.
BJ equals one-quarter width at bottom.
HJ equals underarm seam of gown.
HK equals *CB*.
HL equals four-inch line for setting gusset in.
HM equals four-inch line for setting gusset in.

Gusset (Fig. 60*b*)

AB equals four inches.
AC equals four inches.
ABCD equals square.

Drawers Patterns.—Directions for drafting patterns for straight and circular drawers are here given. Diagrams accompany both types of drafts; also an illustration of a straight drawers pattern, opened for cutting.

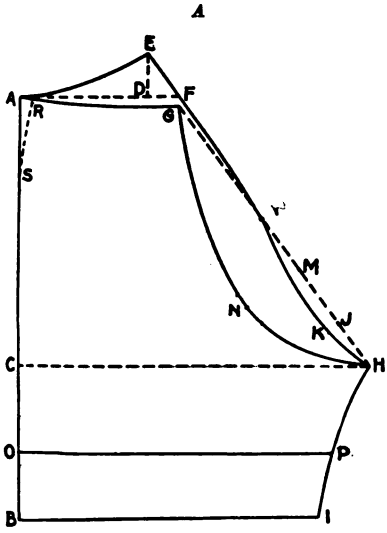
Straight Drawers (Fig. 61*A* and *B*)

Measures Required	*Standard*
Length (from waist to bend of knee)	24 inches
Waist (around waist)	26 inches
Hip (over bone in hip, easy measure, four to six inches below waist)	40 inches

TO DRAFT DRAWERS (Fig. 61*A*)

Fold paper lengthwise

AB equals length to bend of knee (on fold).
AC equals one-half *AB* plus two and three-quarter inches.
AD equals one-quarter waist measure plus one-half inch.
DE equals two inches.
AF equals one-quarter waist measure plus two inches.
FG equals one-half inch.
CH equals one-half hip measure.
BI equals one-half waist measure plus two and one-half inches. (This measure may vary according to individual preference.)
GH equals dotted line.
HJ equals two and one-half inches.
JK equals three-quarter inch (*K* at right angles to *J*).
HL equals nine inches.



HKLE equals curve of back.
HM equals five inches.
MN equals three inches (*N* at right angles to *M*).
HNG equals curve of front.
BO equals desired depth of ruffle.
IP equals desired depth of ruffle.
PO equals line for bottom of drawers when ruffle is desired.

To Cut Out Pattern.—Trace lines *AG,GNH,HI* and *IB*. Open paper and cut on lines just traced; also *AE, ELH, HI* and *IB*.

Fulness at waist line may be fitted out in a dart over hip, as indicated by dotted line *RS*.

Fig. 61*b* shows pattern of drawers opened for cutting.

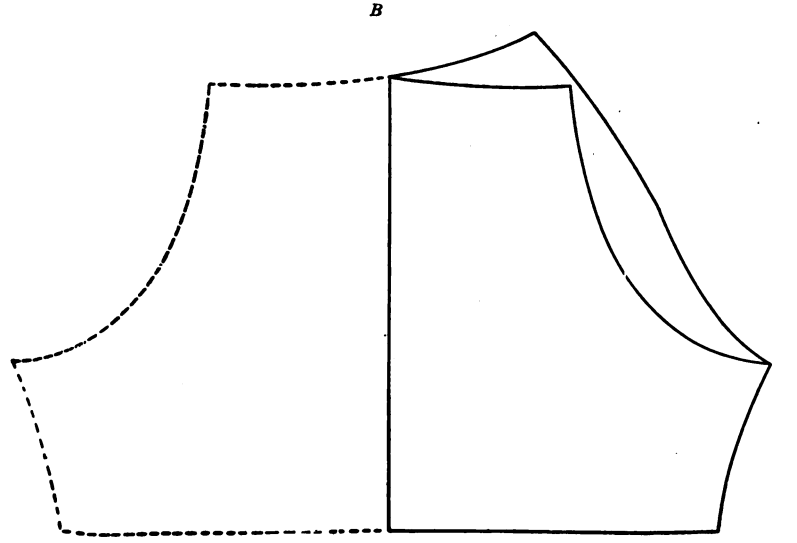


FIG. 61.—Draft of pattern for straight drawers; *A*, draft; *B*, pattern opened out.

Circular Drawers (Fig. 62)

Measures Required	*Standard*
Length from waist to bend of knee	24 inches
Waist—around waist	24 inches
Hip (over bone in hip, easy measure)	38 inches

TO DRAFT DRAWERS

Fold paper lengthwise

AB equals length to bend of knee.
AC equals one-half *AB* minus two and one-half inches.
AD equals one-quarter waist measure plus two inches.

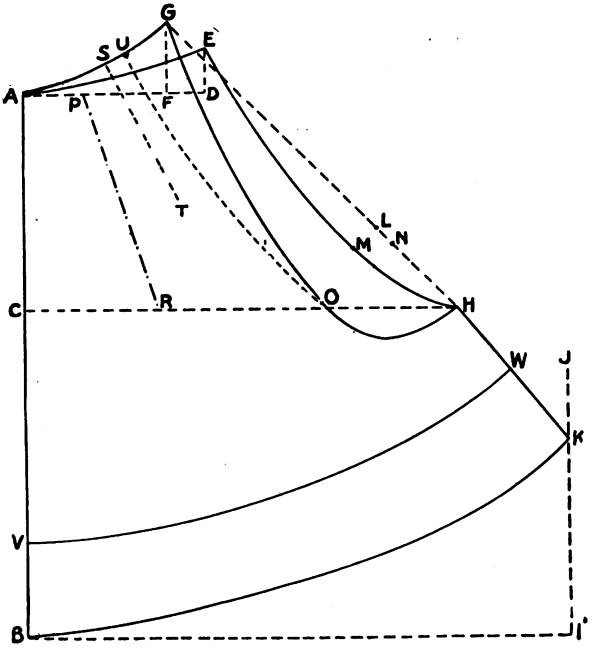


FIG. 62.—Draft of pattern for circular drawers.

DE equals one-twelfth waist measure.
AF equals one-quarter waist measure plus one-half inch.
FG equals one-eighth waist measure.
CH equals one-half hip measure plus one-half inch.
BI equals waist measure.
IJ equals line of indefinite length at right angles to *BI*.
HK equals seven and one-half inches (use *H* as a pivot to swing line, *K* touching *IJ*).
GH equals dotted line.
LH equals five inches.

LM equals one and one-half inches (*M* at right angle to *L*).
EMH equals curve for front.
HN equals four inches.
NO equals four inches (*O* at right angles to *N*).
GOH equals curve for back.
BK equals curve for lower edge of drawers.
AP equals two and three-quarter inches.
CR equals six inches.
PR equals line — . — . — . (line of direction for placing on the lengthwise thread of the material).
GS equals three and one-half inches.

Inverted Plait in Back

ST equals ruler at right angles to *AG*, draw line — . — . — . for fold of plait which is laid to center back of drawers.

Habit Back

GU equals two and one-half inches.
UO equals curve for habit back.

Ruffle

BV equals depth of ruffle minus seam.
KW equals depth of ruffle minus seam.
VW equals parallel to *BK*, line upon which pattern should be folded before cutting drawers from material, if a ruffle is to be used for trimming.

SUGGESTIVE QUESTIONS

1. Of what importance is the hip line in a skirt pattern?
2. State a general rule for designing gored skirts on a circular foundation. Is there a limit to the number of gores? Show, by drawing, how to divide a circular foundation skirt into six gores.
3. Why should you test a skirt pattern in cambric before cutting in cloth?
4. What measures are necessary to draft a skirt pattern?
5. State several rules for fitting skirts.
6. Can a kimono night-gown be cut without a pattern?
7. What is the difference between straight and circular drawers?
8. If a drawers pattern is drafted to the finished length, and you wish to add a ruffle to this, what change is necessary in the pattern before cutting material?

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CHAPTER VIII

SIMPLE PROBLEMS IN CLOTHING DESIGN

EQUIPMENT AND MATERIALS FOR DESIGNING CLOTHING

Fashion Books.
Costume Prints and Post Cards.

Sketches	Traced from historic costume books in libraries and museums. For simple designs, from magazines, folders and catalogues from stores.
Fabrics	Long or short lengths of velvets, silks, ribbons, laces. Samples, sample books. Draperies, unusual stuffs for texture and color study.
Tools	Pencils, thumb-tacks, push-pins, paste. Crayola. Eraser. Tape Measure. Shears. Tracing Wheel. Tailor's Chalk. Tailor's Square. Pins, Needles. Thimble. Dress Form.
Materials	Tracing paper and cloth (natural, white, and colored). Tissue paper. Pattern paper. Heavy drafting paper. Cambric. Cheese-cloth. Unbleached cotton cloth. White and colored thread. Cardboard and art paper for mounts.

Designing may be carried out in one of several ways: (1) Designs may be made on flat patterns (drafted or commercial, but preferably the former), which have previously been tested and fitted. The parts of the garment and decoration may be carried out according to the lines of the pattern. (2) The design may first be draped in some inexpensive material, such as unbleached muslin, cambric or cheese-cloth, on a dress form, padded so that a lining previously fitted to the one for whom the garment is to be made, will set

smoothly upon it. This draped pattern should then be basted, fitted, all lines and points for decoration adjusted to suit the figure and corrections made in the pattern preparatory to cutting the garment. (3) The worker may design directly in the material upon a dress form, or on the one for whom the garment is being designed, laying folds, adjusting drapery, or plaits, until a pleasing effect has been secured. Little risk of "spoiling" material will ensue, if one remembers never to cut into the material until sure that a satisfactory arrangement of the material has been made, and also when cutting, to allow generous seams.

Designs for early problems may be copied from fashion books, prints, etc., but later ones should have an original element. Creative artistic instinct must be stimulated and encouraged. Study of postcards, books, costume prints and visits to art galleries, museums, stores, and the frequent study and manipulation of fabrics of various sorts, furnish abundant material for this instinct to build upon.

At first, designs may be carried out simply as design, without regard to individual application. A definite motive should be embodied in each of these, however, some principle of design clearly worked out. In such exercises, when designing for the individual, care must be taken not to violate the principles of design in the arrangement of line, the distribution of spaces and areas, the adjustment of parts or the application of decoration; the worker must also have in mind fabrics for which the design, to be carried out, would be suitable. In later problems designs suitable for the individual wearer, and the occasion upon which the garment is to be worn, and adaptable to the texture of fabric, which has been selected for the wearer, should be planned.

Designing Without Patterns.—Exercises in laying box plaits, hems, measuring tucks, and the decoration of ruffles and the body parts of undergarments, afford abundant opportunity for fine application of the principles of design in relation of spaces, proportion of parts, and appropriateness of decoration. Study designs of undergarments in fashion books, catalogues and displays in the stores for inspiration and suggestion. Use pattern or tissue paper for practice work in making up designs (Fig. 63).

Hems are used as the finish of various parts and edges of garments, both outer and under. Narrow hems are used on the lower edges of peplum, dust ruffles, plaitings, neck and sleeve ruffling, top

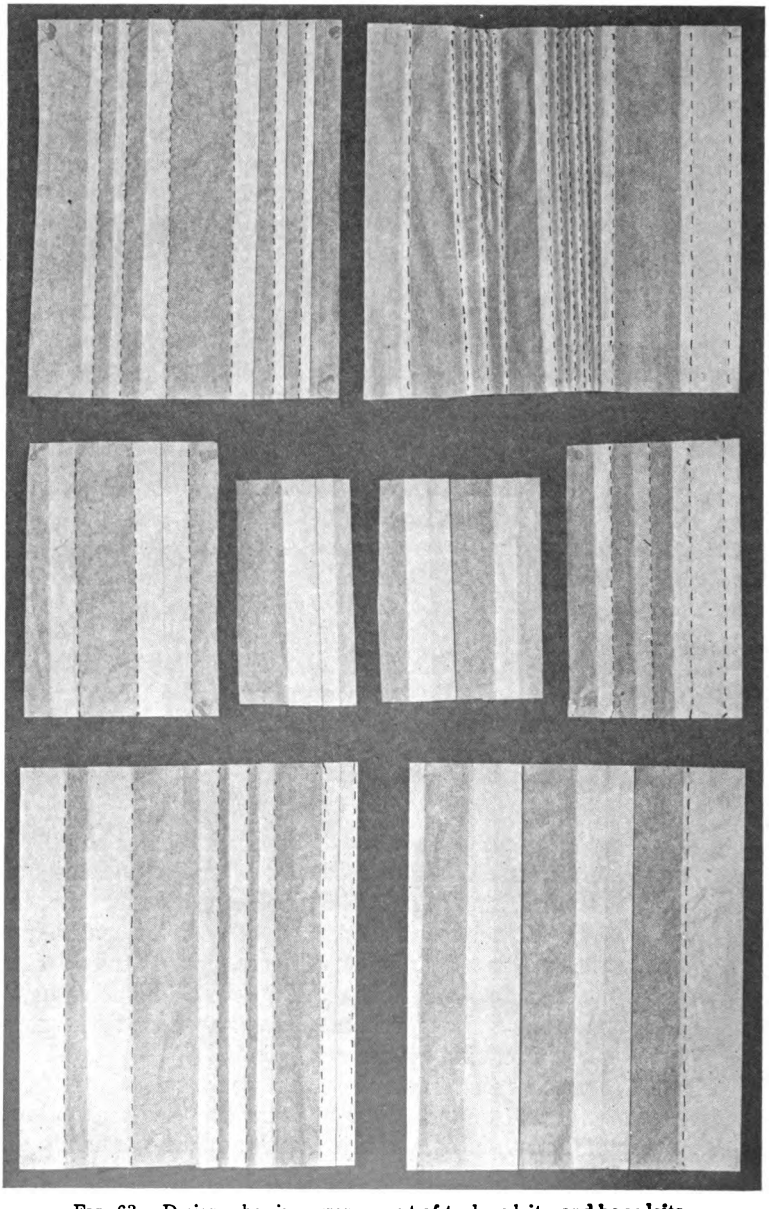

FIG. 63.—Designs showing arrangement of tucks, plaits, and box plaits.

edges of garments, such as corset covers, chemises, night-dresses, etc. Wide hems are used to finish the lower edges of flounces and skirts, the front and lower edges of under and outer garments. Individual taste must decide upon the hem appropriate to various uses.

To Lay a Hem.—(*a*) Fold edge of cloth one-eighth inch deep to wrong side, then again, the desired width; (*b*) fold one-quarter inch first to wrong side, crease, and fold again the desired width. Hems on front edges of undergarments, blouses, etc., are often folded with both turnings the entire width desired. Variety of design may be secured in planning hems, by shaping the upper or lower edges. Lower edges may be scalloped and buttonholed; the upper edges may be shaped. Plain or French hems may be decorated with featherstitching (Figs. 125 and 127).

Box plaits (as finish) are used to finish the right hand edge of the openings of both under- and outergarments. The width of the plaits must be determined by the type of garment to be made, and the kind of material to be used. The plaits for undergarments should be narrower than those on shirtwaists and blouses. Hems for the under side of openings are laid one-eighth inch narrower than on the box plaits. To lay a box plait for a garment opening for practice, fold twice the desired width.

Problem I.—Cut six strips of paper five by eight inches; practice laying hems of various widths; write name in upper left-hand corner and state the use to which this particular hem might be put.

Problem II.—Cut four strips of paper twelve by twenty-five inches, design on one edge of each of these, box plaits and hems such as might be used for the right-hand side of lingerie blouses and shirtwaists. Baste plaits with colored thread, using an uneven basting to simulate stitching. Mark the direction of the buttonholes lengthwise in the center of front plait, and crosswise in the hem or coat opening for front, and in box plait for back opening, the outer end of the buttonhole three-eighth to one-half inch from edge of the garment, in hems and equi-distant from edges of box-plait.

Problem III.—(*a*) Plan a design for a hem (using other paper) having shaped edges; indicate the kind of finish to be used on the edge. (*b*) A design for a hem having a shaped upper edge (Fig. 125).

Tucks give variety to design; they may be wide or narrow and turned to or from the center; interesting effects may be secured by varying the widths of the tucks, by grouping them, or placing them in masses. They may be used as decoration in shirtwaists, blouses, corset covers, chemises, night-dresses, petticoat and drawers ruffles, and lingerie dresses. The width and arrangement

of tucks will depend upon the type of garment upon which they are to be applied. Fine, or thread tucks, are suitable for corset covers, chemises, night-dresses and lingerie blouses. Broad tucks suggest more tailored effects, therefore are excellent for shirtwaists. In considering the figure for which tucks are being designed, it is to be remembered that tucks turning from the front have a broadening effect, while those that turn toward the center seem to contract the figure. If tucks are placed only in the front of a waist, do not let them extend beyond the lower curve of the neck, and if only in center back, keep them within the neck curve. Tucks that carry to the shoulder seam should repeat on the same lines in the back, the folds matching on the seam. To measure tucks, follow the directions given on p. 400.

Problem I.—Using the strips of paper upon which box plaits have been designed, measure and crease tucks of such widths and variations as seem appropriate to the kind of waist for which the front openings have been planned.

Problem II.—Using striped paper or striped cotton material, design tucks that will make a pleasing arrangement of the stripes.

Plaitings are used as a means of decoration, arranged in the forms of ruchings, flounces, etc. Plaits are of several kinds, side plaits, box plaits, double box plaits and simulated box plaits.

Side Plaits.—The rule for measuring tucks will also apply to measuring side plaits, but the process of basting is different. Tucks are basted through two thicknesses of cloth, holding the cloth between the fingers. Plaits are laid flat and basted through three thicknesses of cloth (Fig. 64*A*).

Box Plaits (for Decoration).—To lay box plaits, mark a line for the center of the first plait. On both sides of this line, measure from the line one-half the width of the box plait, for the fold; crease; from this fold, measure once the width of the plait for the line to which the fold of the plait is to be laid; from the line just marked, measure once the width of the plait, crease and lay the fold to the line just marked. Measure from this fold once the width of the plait; crease for the fold of the plait. This completes the plait; repeat until the required number is laid (Fig. 64*B*).

Double Box Plaits.—Very full effects are secured by laying a narrow box plait and then a wider one directly under the first. The effect of both single and double box plaits (simulated box plaits) is secured by folding plaits of less widths (Fig. 64*C*).

Problem I.—Using strips of paper four and one-half by ten inches, design models of plaits, box plaits and inverted box plaits. (The latter are the same as two side plaits laid so as to face each other, Fig. 67.)

Problem II.—Paper as above, designing models of double box plaits and simulated box plaits, showing a line of stitching through the center to form

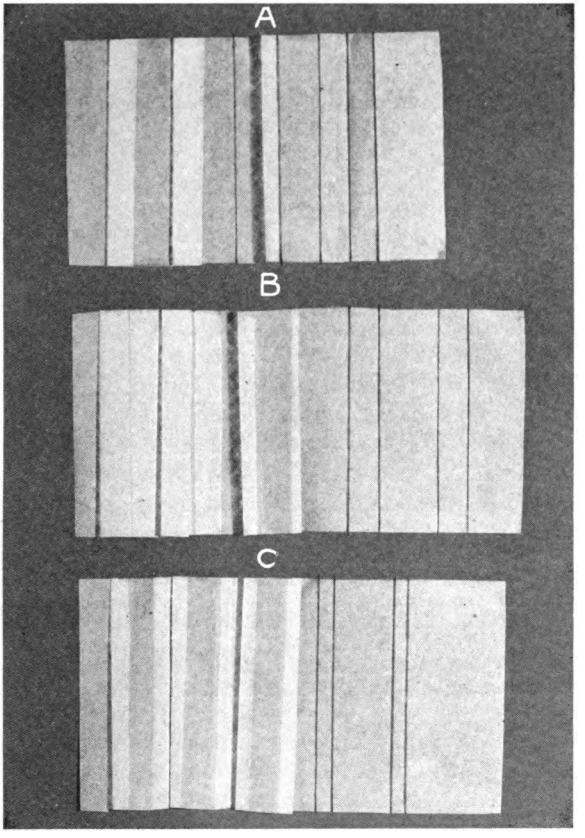

FIG. 64.—Method of marking and laying side, box and simulated box plaits; *A*, side plaits; *B*, box plaits; *C*, simulated box plaits.

a ruching. Indicate the manner of finishing the lower edge of the plaiting, plain hem or hemstitching.

Scalloping.—Variety of design combined with strength of wear may be obtained by the use of scalloping. The pattern may consist of a straight edge of scallops, or variations in shape and depth may

be combined in the same design. Thought must be given to the type of garment upon which the design is to be carried out. Edges of skirts or drawers and the neck lines of corset covers and night-dresses admit of many variations (Figs. 162 and 168).

Problem I.—Take a corset cover or night-dress pattern; place the shoulder seams together; plan a design for simple scalloping (small curves) and eyelets, for the neck and armhole finish; omit the eyelets at the armhole (Fig. 163).

Problem II.—The same as above, adding (*a*) a simple design in scrolls, to be carried out in featherstitching (Fig. 168), or (*b*) a simple design for French embroidery (Fig. 163). These may be worked out and traced upon the garment or dainty designs may be chosen from the transfer patterns, and applied in the same way as embroidery patterns.

Problem III.—(*a*) Plan a design for the lower edge of circular drawers. (*b*) A ruffle for straight drawers, the design turning at the corners of the ruffle, the ends of which are to be left open and scalloped.

Problem IV.—Design an edge for a utility petticoat to be made of cotton poplin.

Lace and Embroidery Insets.—Interesting designs in simple pattern may be carried out for the use of lace or embroidery on garments to be worn for dressy wear. Daintiness and simplicity must be the mark of such, else the beauty will be lost in a mass of decoration. Bands of insertion of lace or embroidery, together with medallions of either, are used to elaborate garments, these often combined with bits of featherstitching or hand embroidery.

Problem I.—Plan simple designs for top edges of corset covers and night-dresses, embodying some of the suggestions in Figs. 162, 169 and 170.

Problem II.—Plan a simple design for a corset cover, to use lace insertion and feather stitching in the body of the garment, near the top, carrying across the garment in line with the top. Also plan the edge for the armhole.

Problem III.—Design a circular flounce for a petticoat, one to be cut in sections, which are to be joined with lace insertion, and center decorations to be placed in each section of the flounce.

Banding.—Bias bands of material make effective trimmings for undergarments. Rows of double bands may be used to decorate the lower edge of utility petticoats, these turned in and stitched twice at the top. The effect of these may be repeated in drawers, corset covers and night-dresses by the use of a single band placed as a binding for the edges, through which ribbon may be run. Either plain or striped material in delicate colors may be used for this form of decoration (Fig. 127).

Problem I.—Design a trimming for the lower edge of a utility skirt, using bias bands of several widths.

Problem II.—Design a similar trimming for the edges of the remaining garments of a set.

Ruffles.—Several designs for ruffles are here suggested. They may be made of the same material as the garment, self-trimmed in simple fashion, or the decoration may consist of lace or embroidered edging and insertions, scalloping, etc. The fulness in the top of straight ruffles may be taken care of by means of gathers or vertical tucks. The lower edge of ruffles when finished with a hem may be treated in any of the ways suggested under hems. In addition to a plain hem, horizontal tucks may be used for decoration in a self-trimmed garment. Horizontal tucks should not accompany vertical tucks in the design for a ruffle. Ruffles may be made any depth desired, hemmed, and simply edged with appropriate lace or embroidered edging; the entire ruffle may be made of edging of simple pattern, the upper edge finished with braid, beading or bias bands of material, or set under a receiving tuck. A more or less elaborate decoration may consist of insets of lace and insertion.

Problem I.—Design a ruffle (finished depth, ten inches) self-trimmed with three-quarter inch hem, nine one-quarter-inch tucks in groups of three, the ruffle to be gathered at the top and finished with embroidered insertion.

Problem II.—(*a*) Design a ruffle having shaped lower edge, suitable for a utility skirt. (*b*) A ruffle for drawers, having lower edges and ends finished with buttonholed scallops.

Problem III.—Design a ruffle for a petticoat to be worn with a lingerie dress; express your own feeling for the type of decoration.

Problem IV.—Design a circular flounce, cut in sections, joined by lace insertion, the decoration,—inserts of insertion in pattern, the lower edge decorated with insertion and lace.

Undergarments.—The method of designing patterns for undergarments has been considered under Pattern Making, pp. 100–106.

OUTER-GARMENTS

Designing Skirts from Flat Pattern.—Various types of skirts may be designed from a plain six-gored pattern. For practice exercises in this work, draft a half-size six-gored skirt to standard measures; measure the gores and place marks for seaming. Trace the pattern on manila cardboard, very heavy paper, or oak tag, and cut the gores apart. Use pattern paper, or if not procurable, unbleached tissue paper in large sheets for designing.

1. *Four-gore Skirt* (*Close-fitting*).—To design a skirt having four gores, with seam in center front, over hip and center back: (*a*) Place the front and first side gore of pattern together, having them meet at the hip line and at the bottom. (*b*) Place the second side gore and back together in the same way. Draw lines all around

the two pieces of the pattern mark points for hip line, darts, and seaming; remove pattern. At top allow one-quarter-inch seam, center front, at hip and center back one-half inch, and nothing at the bottom. Turn in all edges on the seam lines except the waist, and bottom. Cut strips of paper one inch wide and the length of the seams; crease the center of the strip and lay the folded edge of the gores along this center crease; pin to place and represent stitching with pencil or basting (Fig. 65*A* and *B*). This seam finish is called a slot seam.

Two- and Three-gore Skirts.—This same combination of gores may be used to design a two- or three-gore skirt. The openings of a two-gore skirt would come over the hip or under a strap or pocket.

Turn up skirt at the bottom one and one-half inches (Fig. 65*A*).

Directions for Cutting.—This pattern may be marked to cut in one of two ways: (1) If one desires a skirt to be plain in the front, with flare over the hips and in the back, place the centre front and the front edge of the second piece on the lengthwise thread of the goods; this will bring a bias edge on the back of the first side gore and a bias seam in the center back. (2) To make the skirt flare at the sides and back, and ripple in front as well, place the pattern so that the center of each gore is on the lengthwise thread of the goods; this cutting makes all seams bias.

2. *Four-gore Skirt* (*Fulness at Top*).—Place pattern in the same way as in No. 1, but add as much fulness at the waist to the back of each gore as desired, drawing line from this point to the bottom of the skirt. This will necessitate a new waist line extending through the added width. To draft this, place the long arm of the square on the center front and the short arm touching the highest point of the second gore; mark on the new seam line a point opposite this. Then draw waist line from the centre front to this point. Measure new seam line from this point and make it the length of the original line; draw a new line from this for the bottom of gore. Proceed in the same way for the seconl piece.

Directions for Cutting.—Mark pattern for placing. (1) Center front and center back on a lengthwise thread or fold which makes hip seam bias on both edges, or (2) center front on lengthwise thread or fold and hip seam on a lengthwise thread which gives a slightly bias seam in the center back. This skirt is good for cutting in thin cotton, soft silk or crêpe.

Four-gore Skirt, Panel Front and Back.—Cut the front and back the same as for a six-gored skirt, and combine the first and second side gore to make one gore; a dart will need to be taken out

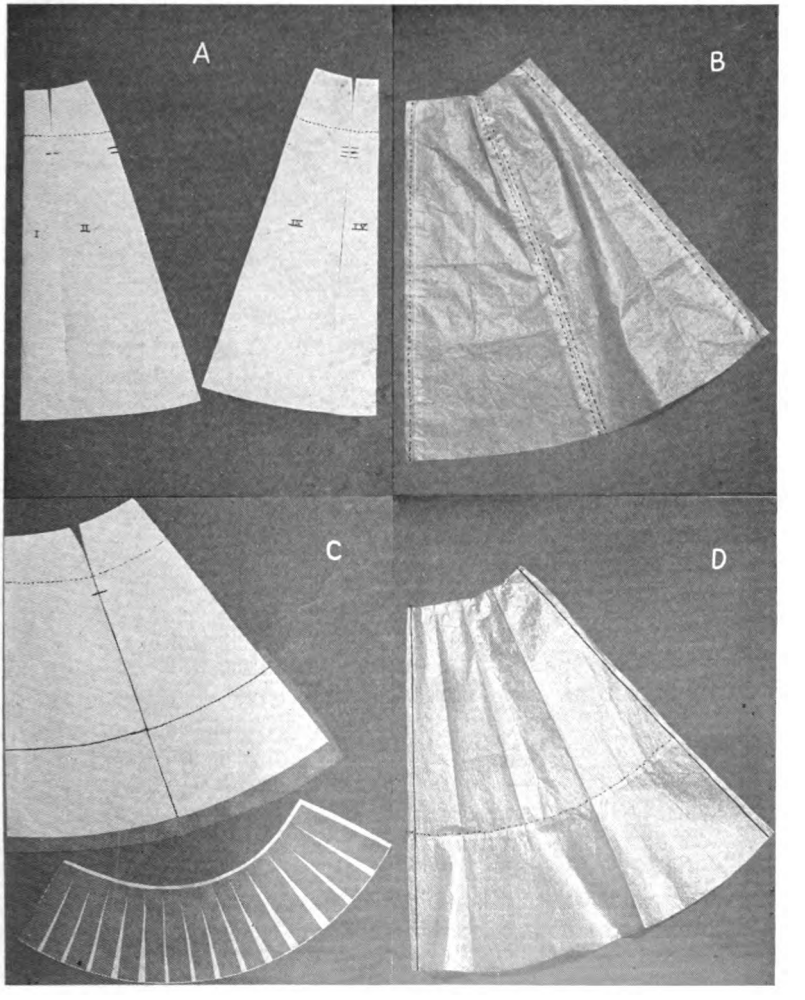

FIG. 65.—*A*, method of combining pieces of six-gored skirt pattern, to design a four-gored skirt; *B*, completed design; *C*, method of designing circular flounce from skirt pattern; *D*, completed design.

of the center of the top of this gore or the fulness cared for by tucks or easing into band.

Circular skirts, like gored skirts, may be narrow, medium or very wide. 1. *Medium Circular Skirt.*—Place the pieces of the six-gore pattern together in regular order, meeting at the hip line, the two side gores lapping slightly just above the hip line, and the bottom of the gores separated sufficiently to give the desired width around the bottom. Do not separate the center front and first side gore quite as much as the other. The slight overlapping above the hip will not affect the fit of the skirt because of its being bias over the hips at this part. Mark around pattern and cut skirt out, allowing one-half inch seam center front, center back and waist, nothing at the bottom (Fig. 66).

2. *Wide Circular Skirt.*—Place the pattern as before, overlapping at the waist, but seaprated enough at the hips and bottom to give the desired width (Fig. 66*C* and *D*). Mark and cut out the skirt as designed; it will be too small at the waist. This can be remedied by: (1) the insertion of a triangular piece of cloth using embroidery or braid to conceal the seam, or (2) the use of a yoke. Very wide circular skirts may be remodelled to accord with the changes in fashion by folding in plaits at the side and covering the top of them with an ornament or by slashing the skirt and arranging fulness in gathers set under a plait and finished with a strap ornament or series of buttons.

3. *Narrow Circular Skirt.*—Place the pieces of the pattern so that they lap at the bottom and separate at the hip line (or below) and waist. This gives fulness at the waist line, to be removed by tucks, plaits or gathers. This narrow skirt may be exaggerated to the extent of producing a peg-top model (Fig. 66*A* and *B*). Mark and cut according to previous directions.

Circular Flounce.—Sometimes one wishes to design a circular flounce for the bottom, or other parts of a skirt, or for use in sections for a lace-trimmed petticoat. To design a flounce which is the same depth at all points, proceed as follows: Lay the pattern of the skirt on a sheet of paper on the table, placing the gores together at hip and bottom, measure up from the bottom (center front) the depth the flounce is to be finished. At the side, measure one-quarter inch more than at the front, and in the center back, one-half inch more than in the front; draw a line touching these points and trace it

through the pattern to the paper beneath. Cut out around the bottom, center front and back of the pattern; remove and slash this circular piece at intervals of one to one and one-half inches to

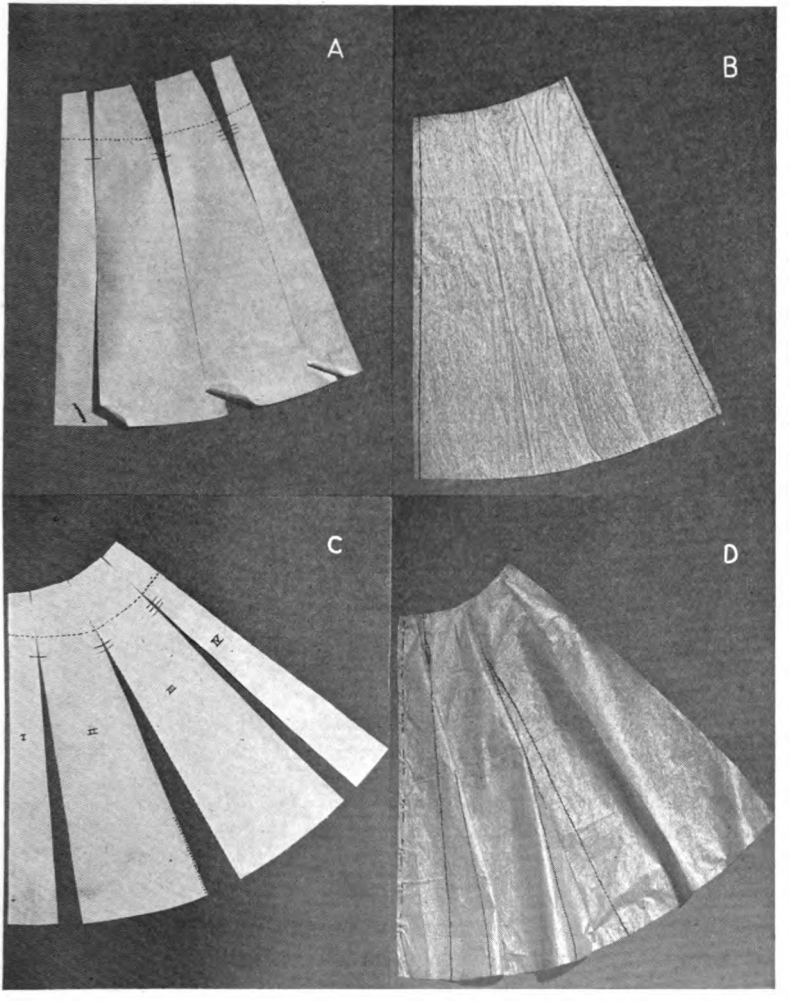

FIG. 66.—Method of designing circular skirts from six-gore pattern; *A*, combining gores for narrow skirt; *B*, completed design; *C*, combining gores for wide skirt; *D*, completed pattern.

within one-sixteenth inch of the top. Lay this on a sheet of paper and spread apart until the desired width is obtained, being careful to keep the top of the flounce smooth so as not to make it too small to fit the skirt. Cut the skirt from the upper part of the pattern, omitting the amount used to design the flounce. Allow seams on both skirt and flounces (Fig. 65*C* and *D*). Be careful about the depth of the circular flounce, that it does not cut the heighth of the figure. The same principles apply to the designing of a flounce that is shaped at the top. The depth of a flounce must be in accord with the heighth and breadth of the figure.

Skirt.—**Problem I.—Design in pattern or tissue paper a four-gore skirt having seams center front, hip and center back, a skirt whose width at the bottom is in keeping with the prevailing style.**

Problem II.—Design a two-gore skirt opening under a tuck in the center front.

Problem III.—Show on a four-gore skirt pattern how it might be used to cut a three-gore skirt, with bias seam in the center back.

Problem IV.—Design a circular flounce from four-gore skirt. Cut skirt and flounce from tissue paper. Finish skirt with plain seam, stitched on the outside; apply flounce with plain seam; stitch close to edge on outside. (Stitching represented by pencil, crayola, or colored thread.)

Plaited Skirts.—Various kinds of plaited skirts can be designed from the gored foundation skirt. If the foundation skirt has been cut out in cambric, fitted, altered and corrections made on the paper pattern, the designing may be immediately done on the material, or a paper pattern cut from the original. Use half-size pattern for practice.

1. *Skirt with Plait on Each Seam.*—Decide on the depth of the plait to be used. Have pattern one and one-half to twice the hip measure at the bottom, lay pattern on material, center front on fold, mark the waist line, hip and seam lines. Measure beyond the seam lines the depth of the plait two to two and one-half inches at the bottom, one to one and three-quarter inches at the hip line; cut top to follow seam line, also measure the seam allowance, beyond the depth of the plait. Use tailor's chalk to draw all lines on material, pencil for paper models. Place first gore with front edge on the lengthwise thread of the goods, far enough from the edge to allow for a seam and once the depth of the tuck. Mark seams, etc. Allow on the back of the gore the same as on the front panel, and mark. Trace all lines on the chalk board, or tailor-baste them. Treat all other gores in the same way (Fig. 67*A* and *B*).

To Baste for Fitting.—Fold the back of each gore on the original seam line and baste one-quarter inch from turn. Lay this folded edge to the original seam line of the next gore, pin and baste to

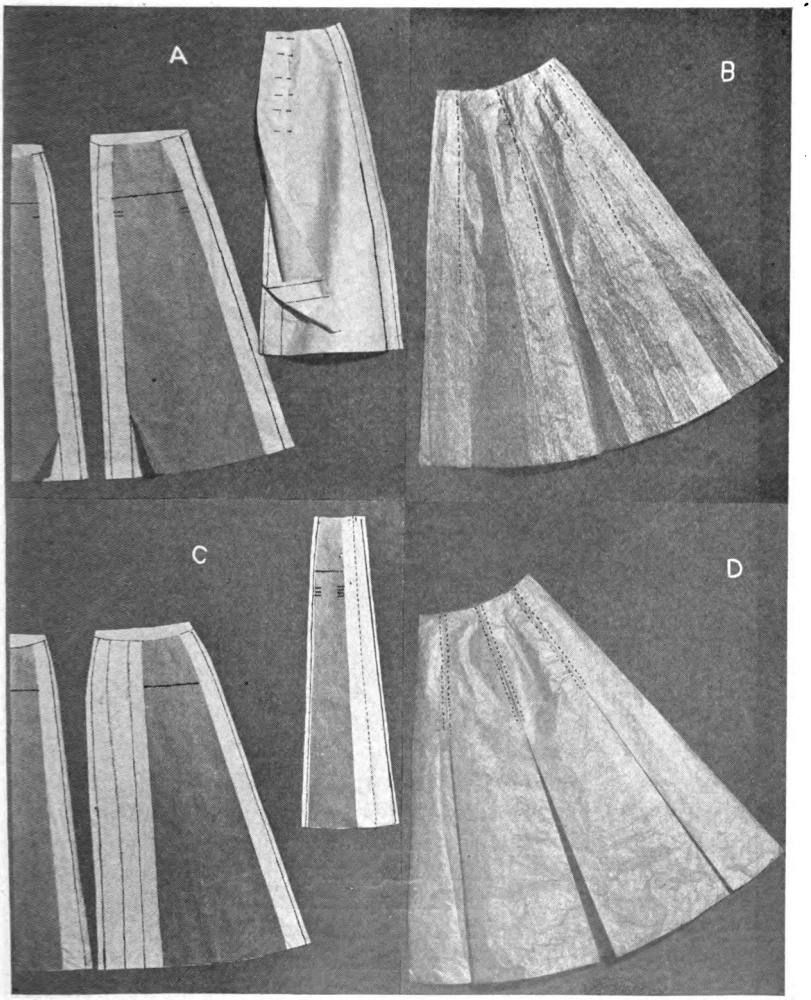

FIG. 67.—Method of designing skirts with plaits or tucks at seams, using gored patterns; *A*, designing plait at each seam, and inverted plait at center back; *B*, completed design; *C*, designing inverted plait at each seam; *D*, completed design.

place; then turn to the wrong side and baste the seam, using the line indicating the depth of the tuck for a sewing line. The plait should be stitched on the right side as far as desired, the skirt turned to the wrong side, the seam stitched and trimmed away from where outside stitching stops, to top of skirt, to prevent bulkiness.

2. *Skirts with Plaits on Seams and Center of Gores.*—Lay plait on front panel as before, and front edge of side gore. Fold other pieces of foundation pattern through the center from hip to bottom, and from hip to waist. Mark or crease firmly. Lay front edge of pattern to seam line of gore, measure beyond the folded edge of pattern twice the depth of plait desired; mark at the edge of the fold of pattern twice the depth of the plait. Take up pattern and lay the folded edge, reverse side up, along the last marking for plait. Allow beyond the gore edge of the pattern for the plait at seam and seam allowance the same as in the skirt with plaits on each seam; repeat with each succeeding gore. Baste plaits as before; fold the plaits in the center of the gores, take line for the fold of the plait and lay it over on the other line for the width of the plait. Baste to place; repeat on each gore. This type of plaited skirt is not desirable, because the centre plaits, being very bias, do not hold their shape.

Inverted Plaits.—(1) To add to the center back of a gored skirt place back of pattern with front edge on lengthwise thread of goods. If plaits are being added to the seams, allow for these. Then place the long arm of the square along the center back. Add two to three inches at the waist, and twice that much to the bottom, plus the seam, draw in the line and mark center of plait and seam and fold before cutting out at waist line (Fig. 67*A* and *B*).

(2) *Inverted Plait at Each Seam.*—To design this skirt, place front of pattern as before and add once the width of the plait plus the seam to the bias edge of the front, and three times the width of the plait plus the seam to the front edge of the side gore; then add once the width of the plait plus the seam to the bias edge of the side gore and three times the width of the plait plus the seam to the front edge of the next gore. Repeat throughout the skirt, adding plait to center back (Fig. 67*C* and *D*).

Four-gore Skirt with Set-in Plaits Over Hips.—Cut two parts of skirt as for a plain skirt. Mark off on the back edge of the front of the pattern and the front edge of the back the width and height of the plaits to be set in. Draw lines on pattern through these

marks. Slash across skirt from hip seam at the point indicating the height of and as much as the width of the plait and any desired shape. Fold material back on line indicated for width of plait. Repeat with other gore, pin hip seam as far as top of skirt and turn in edges of slash. Cut a strip of material eight times the width of the plait by its length, plus seams for joining to skirt. Fold plaits facing each other in material and baste; slip the plait just made into position, face edge of slash to top of plaits and seam plaits as in the other skirts.

Skirt With Panel and Yoke in One, Circular or Plaited Side.—Lay all the pieces of the pattern together upon a piece of drafting paper. Draw the outline of the panel, (which may be the width of the original), and the yoke on the pattern, and trace the outline of the panel and yoke; also the outline of the remainder of the skirt. Cut paper pattern apart, mark for joining, allow seams when cutting in material. For plaited side, trace hip seam and place for plaits according to any of the directions given above (Fig. 68*D*).

Shaped Plaited Skirt.—Shaped lower edge for use in plain material. Trace a circular foundation pattern one and one-half to twice the hip measure. Mark hip line; test hip measure. Divide the bottom of the pattern into equal parts, according to the type of plait desired—wide or narrow. Divide the hip line into the same number of equal parts. Draw heavy lines connecting these points. Lay a sheet of tissue or pattern paper along the front, pin, trace the fold of the first plait, then measure beyond the first fold of the pattern, once the depth of the plait desired, this for the inner fold of the plait. From this, once again the depth of the plait. Draw lines through these points and fold plait so that the line of first fold of the pattern touches the second width of plait measure. Repeat throughout skirt. Mark the space between hip and bottom accurately and fold plaits carefully. Use the pattern for cutting material (Fig. 68*A* and *B*).

Designing Straight Plaited Skirts Without Use of Pattern.—For stripes and plaids (Fig. 68*C*). (1) Take measure as for drafting skirt pattern. (2) Cut enough straight widths of material (each to equal the longest length of the skirt, plus the hem), to give the desired width around the bottom two and three-quarters to four and one-half yards. Seam these widths together; if plaids, see that they match, provision for which must have been made in cutting. Do

not close the back seam. (3) Turn the hem, baste and stitch it. If the plaid is dark and light, have a dark stripe of the plaid on the lower edge of the skirt so as not to show soil so quickly.

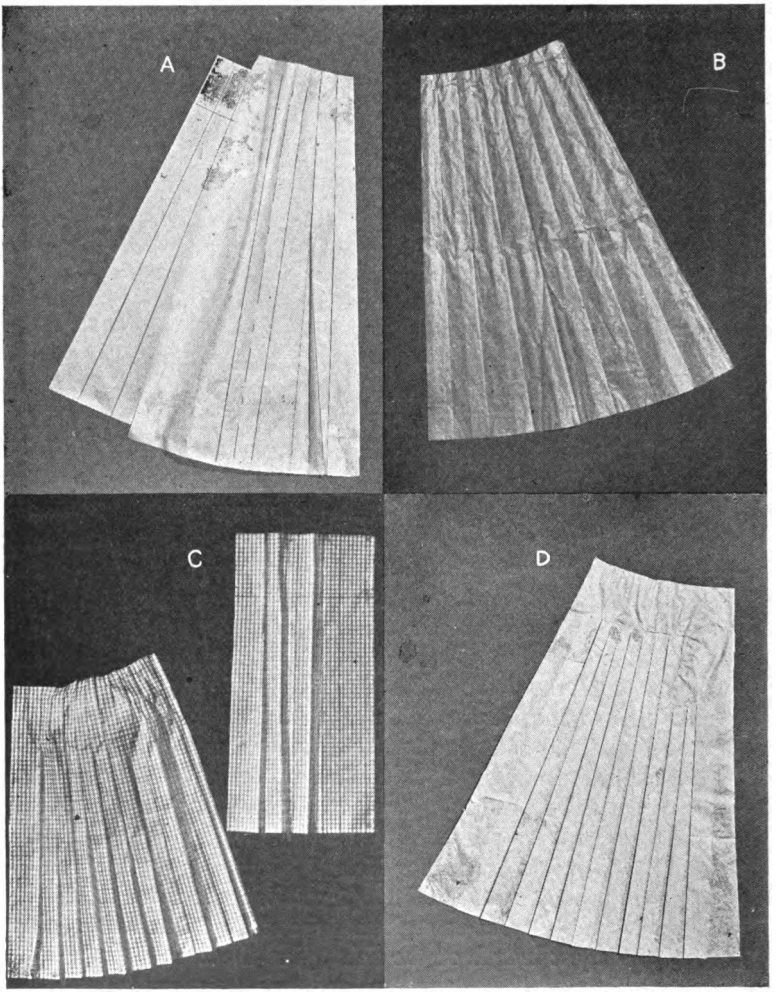

FIG. 68.—Method of designing plaited skirts; *A*, marking plaits for shaped plaited skirt, using pattern; *B*, completed design; *C*, marking plaits for straight plaited skirt without pattern; also completed design; *D*, original design from six-gore pattern, combining principles of designing yokes, panels and plaits.

(4) Measure up from the bottom of the skirt the distance from the hip line to the floor, minus the number of inches which the skirt is to be from the floor, when finished. Mark the hip line with a colored thread all the way across the skirt. Mark the centre front also with a colored thread. (5) The first plait forms the front edge of panel or box plait. Decide on the width you wish the panel at the hip and bottom. Fold the plait, using some prominent stripe for the edge of the plait, sloping it off to the width desired at the hip. The depth of the plait varies from one to three inches at the hip. The second plait should not be as deep as the succeeding plait, to avoid the fulness pushing toward the front.

Plan the depth of the plaits and the space between them according to your individual taste and the adaptability of your material. Difficulty would be experienced in the use of irregular stripes or plaid (Fig. 8, p. 29). All seams must be covered by plaits. Turn and baste the outer fold of each plait on corresponding stripes of the material. Mark the points for the inner fold of the plait and indicate the stripes to which the outer fold is to be laid. Pin and baste to place around lower edge of skirt.

(6) To adjust plaits at the hip line. From one-half the hip measure deduct one-half the front panel at hip. Divide the remainder of the hip measure by the number of plaits you have folded at the bottom to find the space to be left between at hip. Pin outer folds of plaits to place at the hip and baste from the hip line to the lower edge of the skirt.

(7) To adjust plaits at waist line, apply the same principle as at hip line. Pin to place and baste. Try skirt on and re-adjust plaits to belt at waist if necessary so as to make the lines good. Or, after arranging plaits at the hip, the skirt may be slipped on the person for whom it is being made, and the plaits adjusted at once to the belt. This may save the time spent in re-adjusting them, as is sometimes necessary in the first method (Fig. 68*C*).

Problem I.—Design a skirt with plait on every seam and an inverted plait in the center back.

Problem II.—Design a skirt having inverted plaits on every seam.

Problem III.—Design a plaited skirt having shaped lower edge.

Problem IV.—Design a straight plaited skirt to use for plaid material.

Problem V.—Make an original design, showing use of plaits, tucks or panels. In Fig. 68*D* is shown an original design having panels, yoke, and plaits.

Problem VI.—Design a full size skirt for yourself, suitable for wool or linen; the skirt to be a simple tailored model.

DESIGNING WAISTS FROM FLAT PATTERN

Tucked or Plaited Waist (Fig. 69).—Use a plain shirtwaist pattern that has been tested and corrected. Plan the kind of opening to be used in the waist, a box plait or coat opening. Indicate by lines on the center front of the pattern the distance you wish the edge of the first plait from the armhole. Draw a line at this point parallel to the front. The tucks need not always run parallel to the front, they may slant toward the front; if to slant, mark point for lower end of plait as well as upper (and draw line through marks). Measure from this line the width of the plait desired plus the width of the space to be left between the plaits; draw other lines through these points, parallel with the front of the waist. Continue until the desired number of plaits is planned. Then lay the shoulder seams of the front and back of the pattern together and mark points on the back at which the plait marks of the front touch, crowding fulness on back of pattern so seam lines meet. Draw lines on the back to correspond with those on the front, letting them slant toward the center of back at the waist, if desired. Any slant may be used that will give a pleasing affect; the outer fold of the last plait should never be less than one and one-half inches from the underarm seam. In order to secure good lines in the back, it may be necessary to reduce both the width of the tucks and the space between, as they near the waist line, unless striped material is to be used, when only the space between may be changed as the folds of the tucks should fall on stripes. The principle of laying the tucks is precisely the same as that explained under skirts. First, lay the box plait or hem in the length of material and pin to pattern, and for plaits turning toward shoulder, measure across pattern and crease for the fold of the first plait, and measure from this crease once the width of the tuck and mark this line for the inner fold or line for stitching. Baste tuck through two thicknesses of cloth on this line. Measure from this sewing line, twice the width of the tuck plus the space desired between, and crease for the fold of the second tuck. Repeat until the entire number is basted. Measure in the same way for the back, first marking the center back line and measuring from it, slanting the line for the fold of the tuck as much as desired (Fig. 69*A*).

Pattern.—Cut pattern paper away around the edge of the pattern. Indicate lines for the folds of the plaits by different perforations; from this pattern waists may be cut, or the waist may be

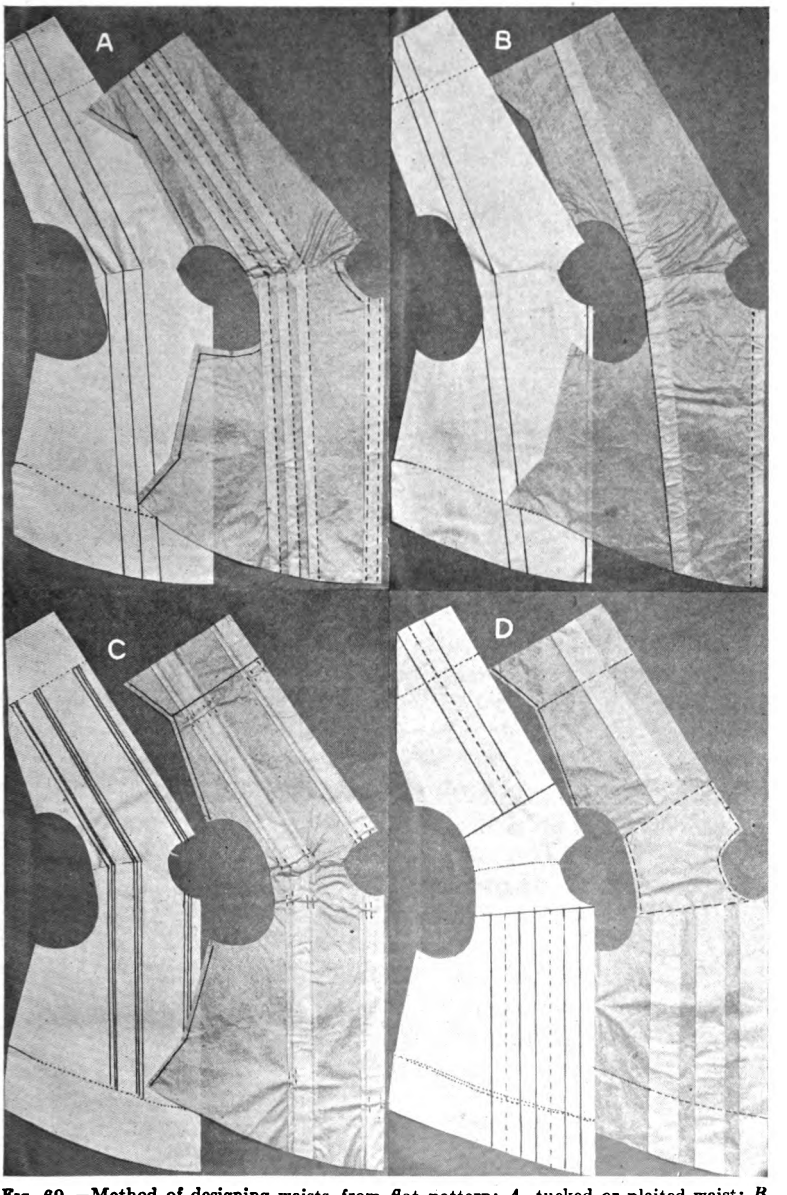

FIG. 69.—Method of designing waists from flat pattern; *A*, tucked or plaited waist; *B* waist with Gibson plait; *C*, box plaits and tucks *D*, box plaits with yoke.

designed directly on the material itself, and the tucks be stitched before cutting the garment out.

Box Plait.—The same principle of designing will apply to box plaits. Lines representing the number, width and position of the plaits should be drawn on the plain pattern. In laying the plaits, measure across material from center front, the space between center front and the edge indicated for first box plait, plus the width of the plait; crease, laying fold toward center front, one-half the width of the plait. Measure from fold once the width of the plait for opposite fold, which should turn toward the armhole; crease; from this fold measure one-half the width of the plait for inner fold; sew through this line and corresponding line beneath opposite fold of plait. For second plait, measure from folded edge line of first plait, the space indicated plus the width of the plait; proceed from this point as before (Fig. 69*D*).

Gibson Plaits.—Place the box plait or coat opening. Measure out from the point of the shoulder the amount the plait is to extend beyond the armhole line. Draw a line from this point, slanting it toward the center front at the waist line unless a very straight line is desired, when it should be drawn straight down from shoulder. Mark the line for the edge of the plait on the back of pattern, touching the same point at the shoulder as on the front. Fold the paper on this line for the edge of plait, allowing desired width, crease, marking under fold, and then block out the remainder of the front. Cut out around pattern, folding tuck back at armhole, after shoulder seam has been cut, so that the edge of the plait will not be cut. Design plait on back. Make perforation in pattern. Open shoulder seam out when making garment and stitch shoulder seam before laying and stitching plait (Fig. 69*B*).

Designs for striped or plaid material. When planning designs for the use of either striped or plaid material consideration must be given to pattern produced by either. A good balance and pleasing arrangement of the lines must be secured, and in the case of stripes, the lines must meet at the shoulder (Fig. 70); this is sometimes difficult to attain. A bias arrangement of plaids will often solve the problem of interest concerning them. Both stripes and plaids having irregular patterns, right and left or up and down, present difficult problems in design (Figs. 8 and 9*A*).

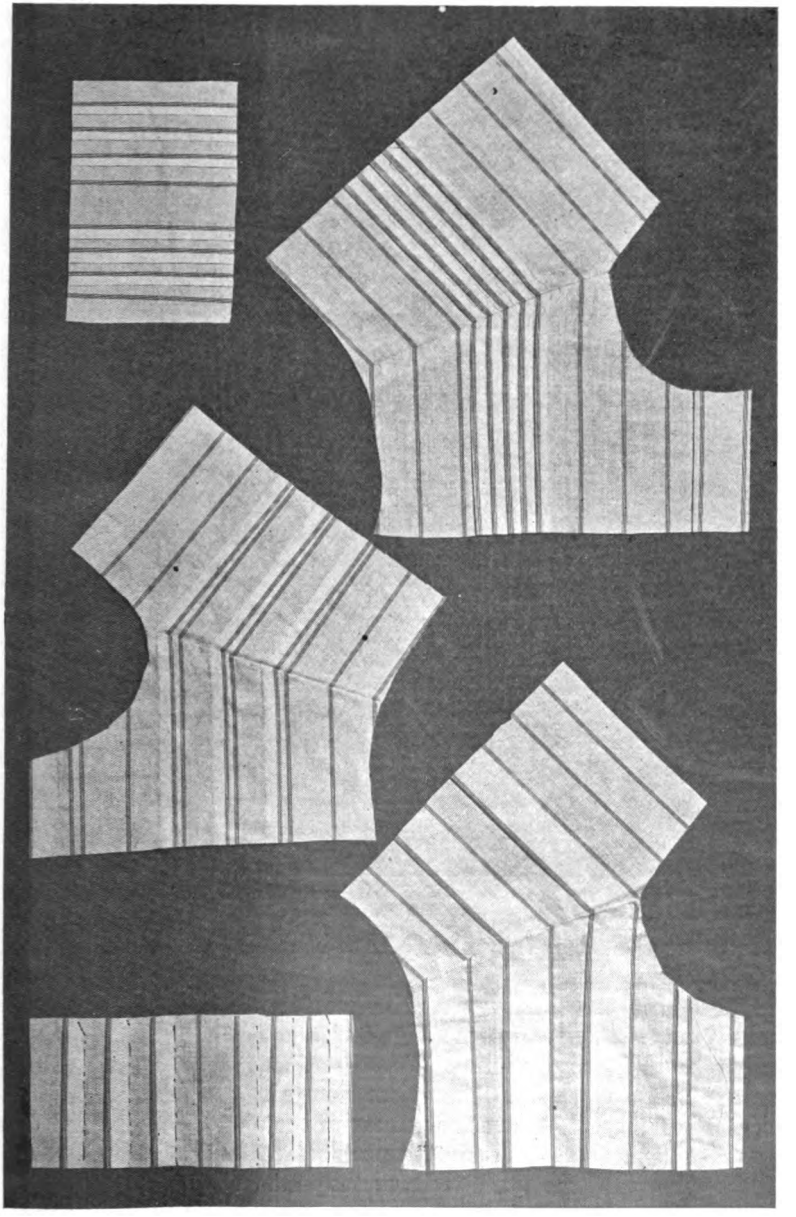

FIG. 70.—**Several arrangements of stripes to form tucks or plaits, and match the stripes at shoulder seams.**

Kimono Waist.—Waist without seam on shoulder, waist and sleeve in one, and under-arm and sleeve seam in continuous line, may also be designed from a shirtwaist pattern.

DESIGNING SLEEVES FROM FLAT PATTERN

Various types of sleeves may be developed from the shirtwaist, and tight-fitted sleeves.

Designing from Shirtwaist Sleeve. *Bishop or Bell Sleeve.*—Very full at hand, hanging loose over a close puffed under sleeve, or gathered into a very narrow cuff. Fold pattern; measure out from lower front edge for desired amount of fulness, connect this point with the elbow by slightly curved line; measure below edge of sleeve at fold one and one and one-half inches and draw curve from this point to end of inside seam line; extend line of fold to meet curve.

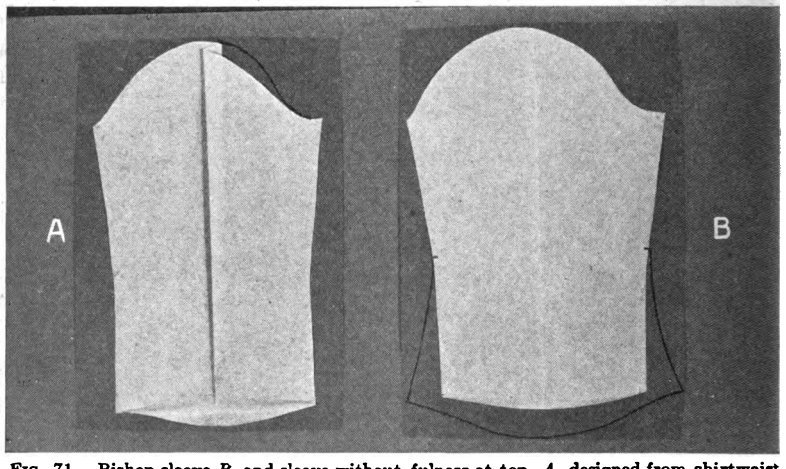

FIG. 71.—Bishop sleeve *B*, and sleeve without fulness at top *A*, designed from shirtwaist sleeve pattern.

If a very full sleeve is desired, add to back of fold and inside seam (Fig. 71*b*).

Puff Sleeve.—Follow the principle for designing a night-dress sleeve on shirtwaist pattern (Fig. 44*A* and *B*).

Close Fitting One-piece Sleeve.—A shirtwaist sleeve may be made into a close-fitting one-piece sleeve by one or two methods: (*a*) Place a graduated tuck at elbow on the under side of the sleeve, at right angles to the seam, keeping sleeve folded, the tuck to be deep enough at the seam, to draw the under sleeve up, so that the

lower edge from the seam line of the upper sleeve to the fold equals one-half the hand measure. Test, inside length elbow and hand measures (Fig. 72*C*). (*b*) Place a tuck or dart extending from just below the elbow to the wrist. Measure on the elbow line from center fold on under side of sleeve one and one-half inches. At the wrist one-half inch from fold on upper sleeve. Dart line connecting these two points folded over to meet the point at wrist, which will give the hand measure. Spring dart out again, below wrist if flare is desired (Fig. 72*A* and *B*).

Sleeve Without Fulness at Top.—Measure the armhole of waist pattern. Also the top of sleeve pattern, then measure each side the center fold of sleeve, one-half the difference between the two measures, and fold a graduated tuck through the length of the sleeve

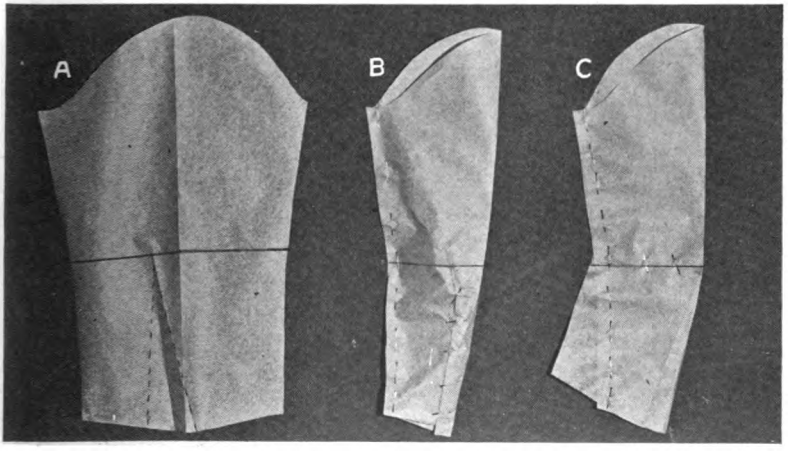

FIG. 72.—Designing close-fitting sleeve from shirtwaist sleeve pattern; *A*, using dart from elbow to wrist; *B*, completed sleeve; *C*, using tuck at elbow.

ending at nothing at the wrist. Re-shape the top of sleeve after tuck is taken out (Fig. 71*A*). Fulness may be added by reverse method, slashing and separating the pattern until the correct amount is gained.

DESIGNING FROM FITTED SLEEVE PATTERN

Leg-o'-Mutton Sleeve.—This sleeve is in one piece, with one seam on inside of arm. It has more or less fulness at the top, which clings to the arm or puffs out at the top in great fulness, according to the prevailing modes. Separate the pieces of the pattern at the top, keeping the lower parts together as far as the elbow until the

desired fulness is secured. The greater the width added, the greater height at the top becomes necessary until a sleeve resembling a filled balloon is attained. To gain added fulness, the pattern may be enlarged on the front seam as well as between (Fig. 73*B*). To cut: Place the center line of added fulness on the lengthwise thread of the material.

Close-fitting Sleeve.—Place pattern so that the pieces are together from the elbow to the top. Take out a dart from elbow to wrist.

Bishop Sleeve.—Same as above, omitting the dart.

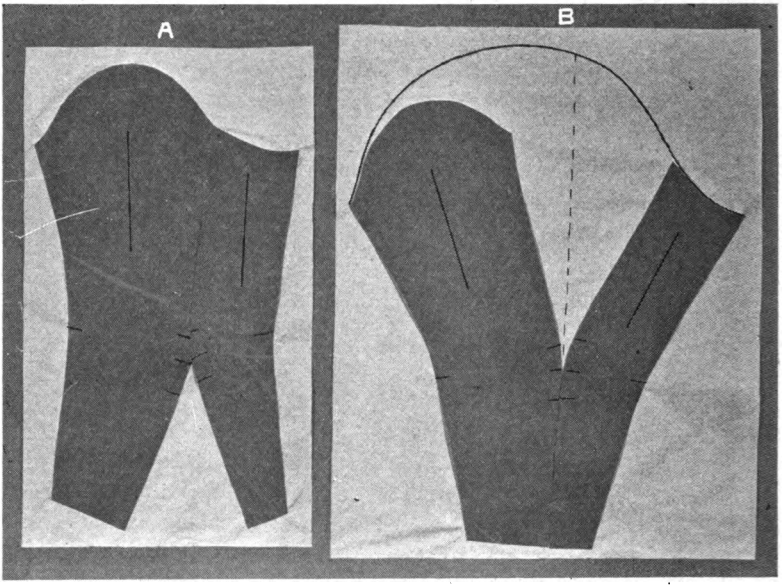

FIG. 73.—One-piece sleeves designed from two-seam sleeve pattern; *A*, close-fitting sleeve with dart from elbow to wrist; also bishop sleeve; *B*, leg-o'-mutton sleeve.

MISCELLANEOUS DESIGNS

Sailor Collar from Shirtwaist Pattern.—Place center of back of pattern on lengthwise edge of paper. Place front so that shoulder seam meets shoulder seam of back at armholes and neck; separate shoulder lines one-quarter inch at neck, and one and one-quarter inches at arm's eye. Cut around neck line, and design outer edge and front any shape desired. Cut in cambric, center back on lengthwise fold; fit to neck (Fig. 74*B*).

Yoke from Shirtwaist Pattern.—Place center back of pattern on edge of paper, and front so that shoulder seam meets shoulder seam of back at armhole and neck. Design lower edge of yoke on back, any depth and shape desired. Let the lower edge of the front fall as far below the shoulder seam as desired, and any shape. Trace

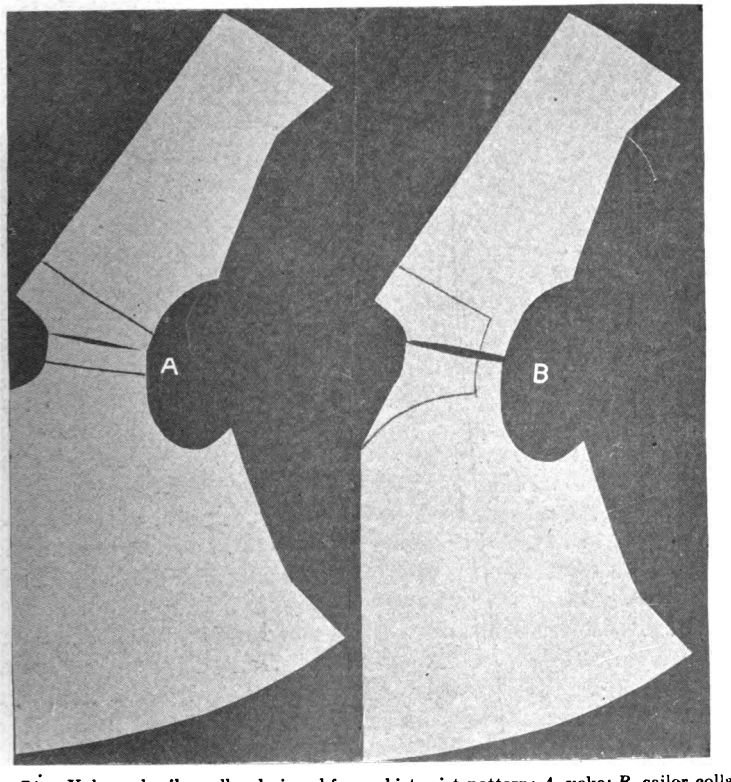

FIG. 74.—Yoke and sailor collar designed from shirtwaist pattern; *A*, yoke; *B*, sailor collar

yoke, cut out pattern. Place center back on a lengthwise fold of cambric, cut and fit (Fig. 74*A*).

Yoke from Skirt Pattern.—Combine the gores the same as in design for skirt with yoke and panel in one (Fig. 68*D*).

Problem I.—(*a*) Design a short sailor collar, suitable for a sport dress, (*b*) for a middy blouse.

Problem II.—(*a*) Design a yoke for a middy blouse, (*b*) for a mannish shirt.

The Dress Form.—For the purpose of designing, it will be necessary to have a dress form (Fig. 75), on which a close-fitting lining previously fitted to the person for whom garments are to be designed, has been placed, the form padded with tissue paper to fill out the lining. It will also be necessary to have either a cardboard sleeve, cut from the fitted sleeve lining, or a fitted sleeve lining stuffed with curled hair or tissue paper (Fig. 85).

Fitted Lining.—Use two and one-half yards closely-woven unbleached cotton cloth. Use either a drafted or commercial pattern to cut the fitted lining. When commercial patterns are used, follow the directions on the patterns for the correct placing on the material.

To Cut Waist from Drafted Pattern.—Place cut ends of cotton cloth together; place the center front on a lengthwise thread of the goods, and the other pieces, side front, back, side back, and under arm, with the chest line on a crosswise thread of the goods (Fig. 76).

Sleeve.—Place back of upper and under sleeve above elbow on a lengthwise thread of the goods. Cut one sleeve.

Collar.—Lengthwise around neck.

Seam Allowance.—Waist: three-eighth inch on neck and armhole; one inch on all other seams. Sleeve: one-quarter inch top and bottom and one inch on length seams. Collar: one-quarter inch all seams. Cut out on seam allowance marks.

Marking Seams.—Waist: trace waist, neck and armhole lines, also the point at bust on front and side front; trace all around each piece of the pattern, from the waist line up and waist line down. Sleeve: trace elbow line around top, bottom and length of pattern. Mark waist, neck and armhole and elbow lines and center shoulder with colored thread. Collar: trace center front, darts and all around pattern. Mark center front with colored thread; baste darts, and turn upper and lower edge and right hand end on tracing and baste.

To Baste Waist for Fitting.—Pin the pieces of the lining together, having waist lines and all tracings meet, pins at right angles to seams; leave waist open in center back for fitting. In pinning front and side front together, hold the more curved side toward you so that the fulness may be held in; let tracings at bust meet. Pin center of the shoulders and seam-lines at crossing together; hold back shoulder toward you, to ease material in to the front shoulder. Baste seams, using small stitches and sewing from waist line up and waist line down (Fig. 77).

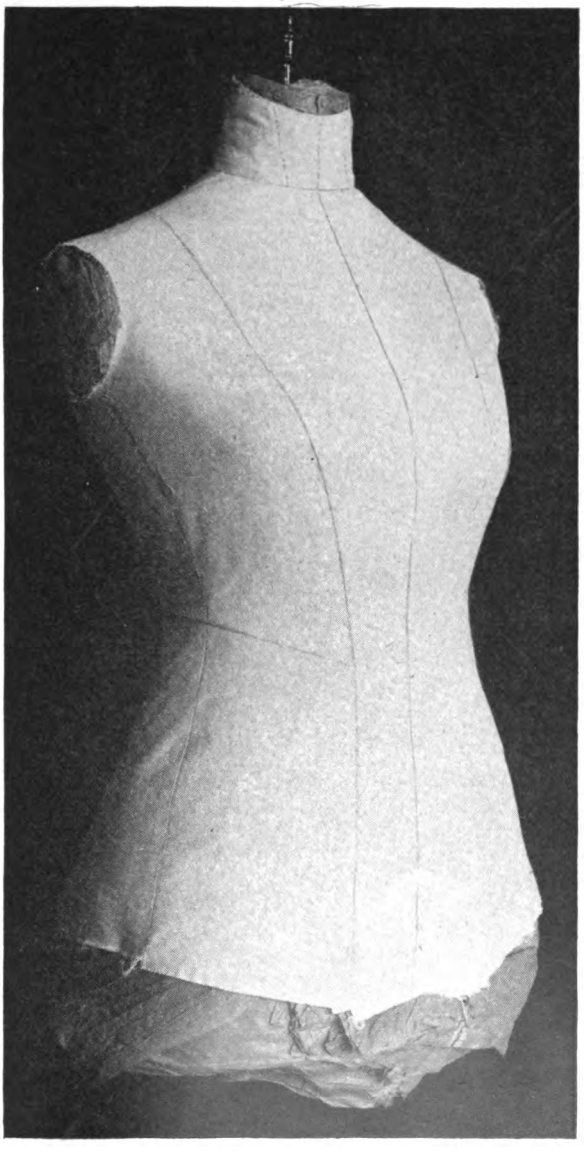

FIG. 75.—Dress form, padded with tissue paper to fill out fitted lining.

Sleeve.—Pin front seam together, having elbow lines meet; also the lines at the top and bottom; lay sleeve on table and fold the back seam of the upper sleeve over to seam of under sleeve; pin seam so

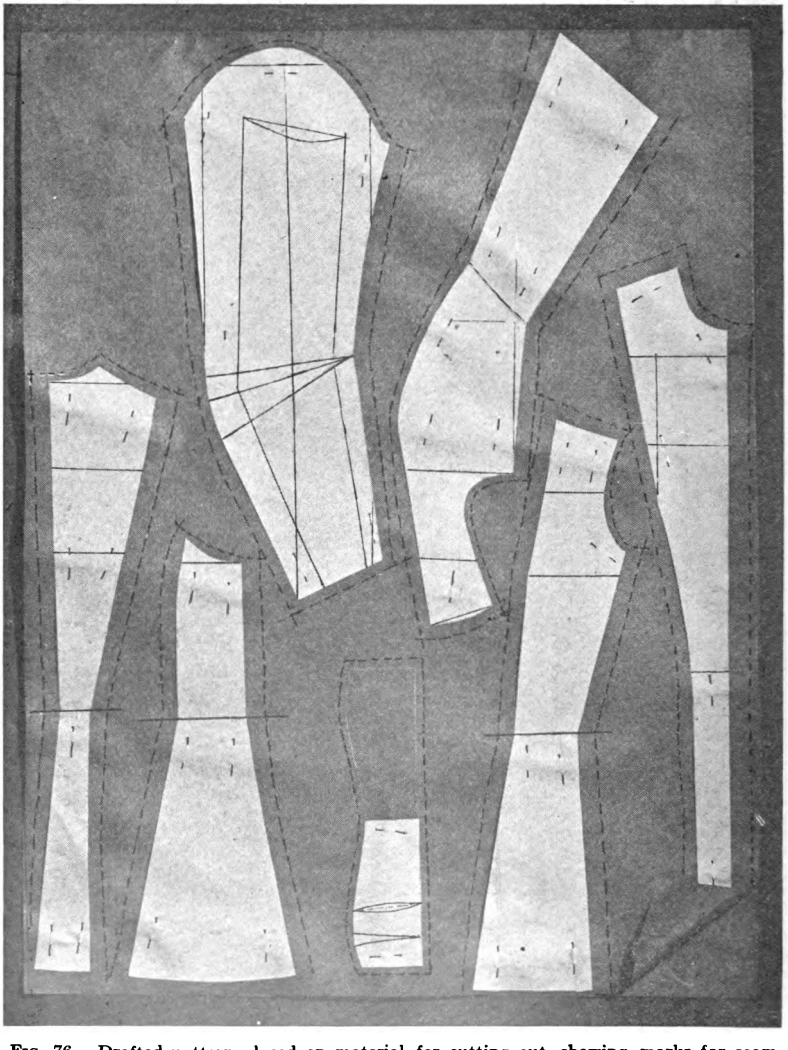

FIG. 76.—Drafted pattern placed on material for cutting out, showing marks for seam allowance.

that top lines meet, also bottom lines; then pin from bottom up, and top down, until the fulness at elbow is adjusted; baste seams, using small stitches (Fig. 78*B*).

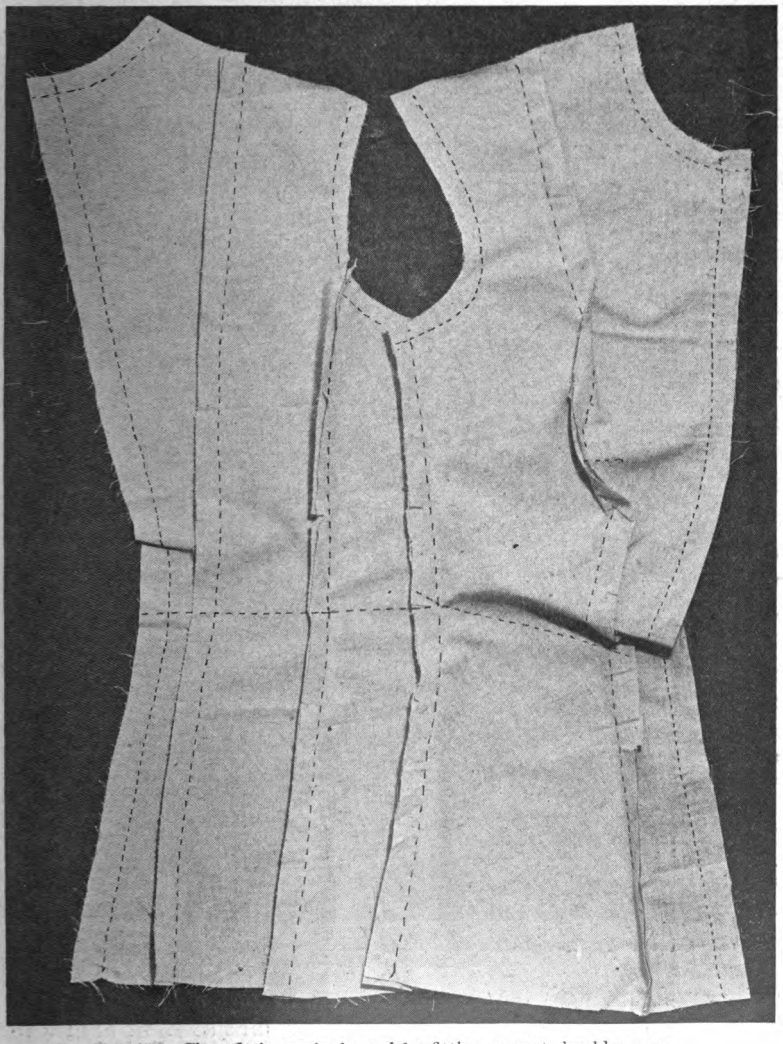

FIG. 77.—**Close-fitting** waist basted for fitting, except shoulder seam.

To Fit Waist.—Clip seams at waist line and two inches above and below, to allow them to spring when waist is tried on. Place

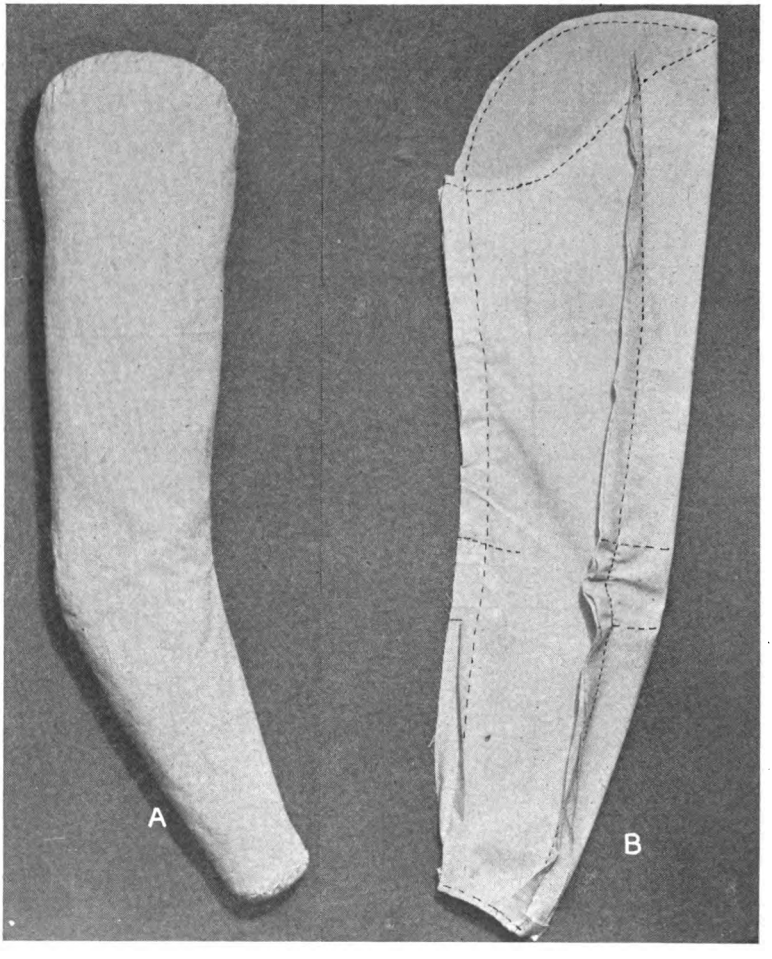

FIG. 78.—Close-fitting sleeve basted for fitting padded sleeve for draping; *A*, padded sleeve; *B*, basted sleeve.

waist on figure with seams inside. Pin waist together in center back, keeping waist and neck lines together, pins at right angles to edge and close enough together to keep edges smooth. Draw waist

together smoothly over figure and pin occasionally around the hips to keep it from slipping up. Turn underarm and shoulder seams toward the front in fitting. Look waist over carefully and note the trend of the seam lines. Fit on right hand side only. Fit at waist first, then if there is any fulness over hips, fit this out; or if the reverse, let out seams, being careful in either case to keep good lines, placing pins close together and in even lines. Then fit shoulder, armhole and neck, if necessary.

Possible Necessary Alterations.—If the waist is good in line but appears generally loose, stitch inside the bastings on all seams; if tight, the reverse. If too loose, only at the waist, take in the seams enough to remove the fulness, sloping them off to nothing where the waist is correct. Usually this can be corrected in the seams of the side, back and under arm. If the waist draws in a deep wrinkle across the chest or back, just below the neck, take up the shoulder seam and clip the neck line enough to let the waist lie smooth. See Fig. 39*A*, shirtwaists. Where there are fine wrinkles which fall directly from the shoulder seams through the front of the waist, this seam should be opened and stretched upon the back seam enough to take out the wrinkles. Wrinkles which draw diagonally from the neck toward the armhole line may be removed if the shoulders are sloping, by taking up the shoulder seam at the armhole, slanting to do nothing at the neck (Fig. 39*B*). If such wrinkles occur with square shoulders, open the shoulder seam, keep the traced seam lines together, and slip the front shoulder down from the neck on the back shoulder until the waist lies smooth; then build up the front of the waist where it is short at the neck and trim it out at the armhole where it has been made too long. This latter alteration can only be made in a trial pattern, not in actual material, unless some device could be used for covering the join in the material (Fig. 39*C*). Fulness at the armhole in front or back of a fitted lining may be removed by taking small darts in the lining (Fig. 79*A*). If the length of front and back measures have been taken too long, the waist may seem very full and drop in a couple of wrinkles across the back or front. In such case, pin a tuck in the lining where the fulness shows (Fig. 79*A*). If the waist pushes out at the hips because the length measures have been taken too short, slash the waist across shoulders or the bust and drop it down enough to set smoothly; then insert a piece of cloth in the opening (Fig. 79*B*).

To Fit Sleeve.—Clip inside seam at elbow and two inches above and below. Draw the sleeve over arm, letting elbow rest in fulness at elbow point; draw upper part of sleeve to position, to see that it is of correct size, and long enough from elbow to top; also from elbow to waist, noting the width of the sleeve also.

Collar.—Try collar to see if it is correct size.

Alterations.—Remove waist after fitting; trace alterations; open

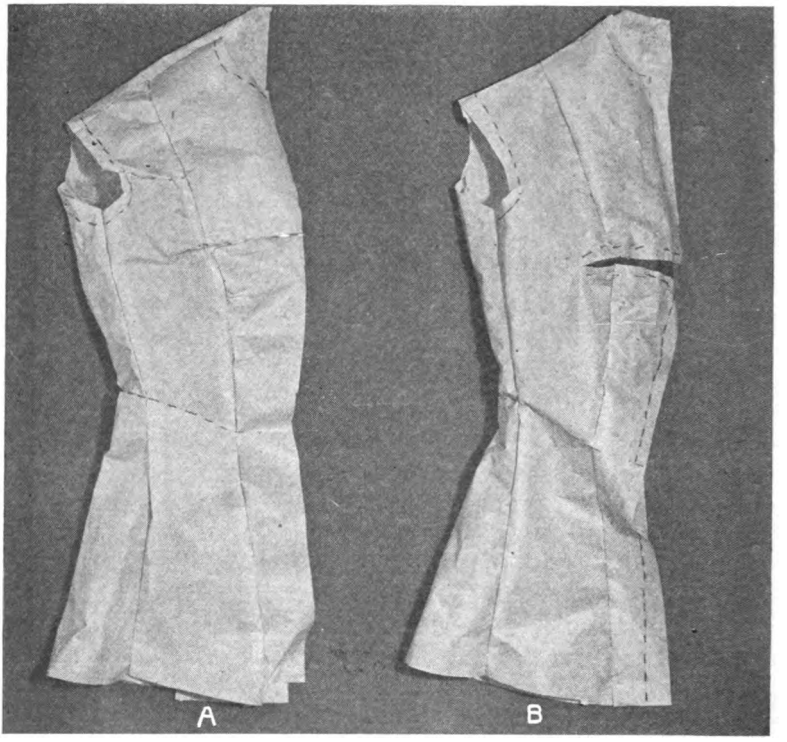

FIG. 79.—Alterations in close-fitted lining; *A*, dart at armhole to remove fulness. Also tuck across front to correct length of front; *B*, front of waist slashed with material set in, to lengthen front.

seams and trace new lines on other side of waist; make alterations on sleeve and collar. Rebaste waist; place sleeve and collar, for second fitting.

To Baste Sleeve in Waist.—Measure one-half to three-quarter inch back of shoulder seam and fold armhole in half; at the opposite

point place pins to mark point for front seam of sleeve. Lay shoulder seam to center of underarm piece and fold armhole in half. At the opposite points on the top of armhole, place pins to mark the points between which to distribute the fulness in the top of the sleeve. Lay waist on table, and holding under side of armhole toward you, pin sleeve to place, keeping sleeve easy on under side of armhole. Pin as far as sleeve is to be plain; gather, using double thread, the remainder of the sleeve and distribute the gathers between the points marked, arranging most of the fulness so it will let the shoulder bone set into it. The center of the upper sleeve should come to the top of the shoulder, the lengthwise thread carrying straight down the arm. Baste collar to place.

Second Fitting.—Try waist on and see that alterations have been correctly made. Remove waist and stitch seams, either inside or outside bastings, according as to whether it is tight or loose; remove bastings, trim seams to five-eighth inch, clip as before to within one-quarter inch of stitching, round the seams at the notches and press seams open.

To Pad Form.—Slip lining on form to get a general idea of the parts that will need the most padding. Use large sheets of tissue paper, wrapping the form in surplice fashion. Slip waist on form occasionally to see where extra padding may be needed. This work must be most carefully done; no lumps or hollows must be visible, and the whole must be smooth and firm when completed (Fig. 75).

Draping.—Early problems in draping with practice materials, or directly with the fabrics themselves, like the early problems in designing on flat patterns, may be copied from fashion plates or prints, until some degree of inspiration and experience is obtained, then original designs should be draped; experimentation at all costs, however, is to be encouraged. Study design to be followed carefully, having chosen it with regard to fabric in which it is to be fashioned and its suitability to wearer. Note all important parts of design, general lines, points of fastening, details of decoration, etc. Become familiar not only with the characteristics of fabrics in general, but with the nature of the grain of materials especially. Pleasing effects in design may often be marred by misuse of the grain of a material. Whenever opportunity offers, handle and manipulate material by way of experimentation; interesting facts will disclose themselves. A few points by way of suggestion are noted here.

Shirrings and gatherings made across the warp threads make more graceful flounces and ruffles than the reverse, while for some effects (puffings, etc.), gathering on the bias is most effective. In draping it is well to remember that bias folds are more graceful where soft effects are desired. Lengthwise folds of material are desirable where severity of line is sought. They press in well, and retain their shape; on the other hand, crosswise folds present a rounded appearance and do not retain their shape as well if pressed. In silks, soft, unpressed folds are most attractive.

Lay a large sheet of heavy paper on the floor, set the form on this, and let the surplus material lie upon it while working out designs. Use only good pins or needles so as not to mar the fabric, handle it lightly and quickly so as not to crush it. Use as few pins as necessary and do not cut material until absolutely sure the desired effect is secured for that part of the garment. Fig. 86*B* and *C* illustrates methods of lifting material in order to secure certain effects in folds of drapery; results are only attained through frequent handling and experimentation. After some degree of success in copying designs has been attained, simple problems into which individual ideas can be carried should be attempted by the designer to increase her skill and encourage the creative instinct. In designing clothing for herself or others, the designer must study carefully the individuality of the wearer, the contour of her face and figure, her mode of dressing her hair, her coloring and then the effect of certain color, texture and lines in relation to these, before planning the design. Each one should discover her own weakness; and then, by study and application, she should correct her faults of attire. If the color sense be weak, study color from every angle; if the appreciation of line and form is at fault, get at the difficulty and remedy it; if it be lack of understanding of fabric and texture, handle all the materials possible; learn to know them intimately, as to their adaptability for light and shadow, folds and drapery. Failure and discouragement more often ensue because of a lack of intelligent understanding than lack of interest in the matter of clothing oneself well.

Draping Waists.—A simple waist to be used for a corset cover or shirtwaist may be draped as follows: Lay box plait for front opening. Mark the center of the box plait, place tape about waist line of form. Place the center of box plait along center front of form; pin to

place, leaving enough material at the neck to allow for shoulder seams after the neck is cut out. Smooth material across front so that the grain of the material lies straight across the chest; pin to place; smooth at the neck, cutting out enough to make it smooth, and being careful to leave plenty at the top of shoulder. Pin along the shoulder line, the position of which will vary with different figures. If shoulders are square or the back full, there is a tendency to appear round-shouldered. In this case, place the shoulder seams back of the top of the shoulder. For sloping shoulders place the seam directly on top. Adjust the fulness at the waist line, laying it in backward, turning plaits or pinning the gathers. Mark the armhole line with pins. This line carries straight from the shoulder to the muscle in the front of the arm where its joins the body. Care must be taken not to make this line curve. Cut away all the extra material, allowing good seams.

Back.—Mark the lengthwise center of material with colored thread. Place this line to the center back, and pin to place, allowing for the shoulder and neck seam. Smooth the material across back so that the crosswise threads are straight across the back. Pin the shoulder seams together. Mark the armhole line. Arrange the fulness at the waist; a little fulness keeps the seams straight on under arm, much fulness makes the seam bias. Pin under arm seam and waist at belt. Allow two inches below the belt. Mark with pins the line on which it is desired to finish neck. Remove from form and baste for fitting; mark neck and armhole lines with colored thread (Fig. 80).

Waist with Fulness Coming from Underneath the Yoke.—First, design the yoke without seam on shoulder, following any line at the lower edge which is suitable to the wearer. Mark with pins the line of the lower part of the yoke and turn the edges back, while at work on the lower part. Then drape the remainder of the waist, allowing fulness where it is to be gathered, tucked or plaited. Pin in tucks for a short distance, or gather where desired; draw up the threads, and replace the yoke and pin to place. Pin seams and mark armhole and neck lines. Remove from the form and baste for fitting.

Problem I.—Drape a simple waist that can be used for a corset cover. Design a peplum for it, using a six-gored skirt pattern.

Problem II.—Drape a waist suitable for lingerie material, placing tucks and designing a yoke without seam on shoulder.

Problem III.—Drape an original problem, a waist suitable for silk to be worn without a coat suit.

FIG. 80.—Draping a simple waist.

Draping Sleeves.—Sleeves may be draped over a cardboard form (Fig. 81), or over a stuffed sleeve (Fig. 78). The stuffed sleeve has the advantage of showing the shape of the arm. The cardboard sleeve is flat, but has the advantage of allowing the hand to slip

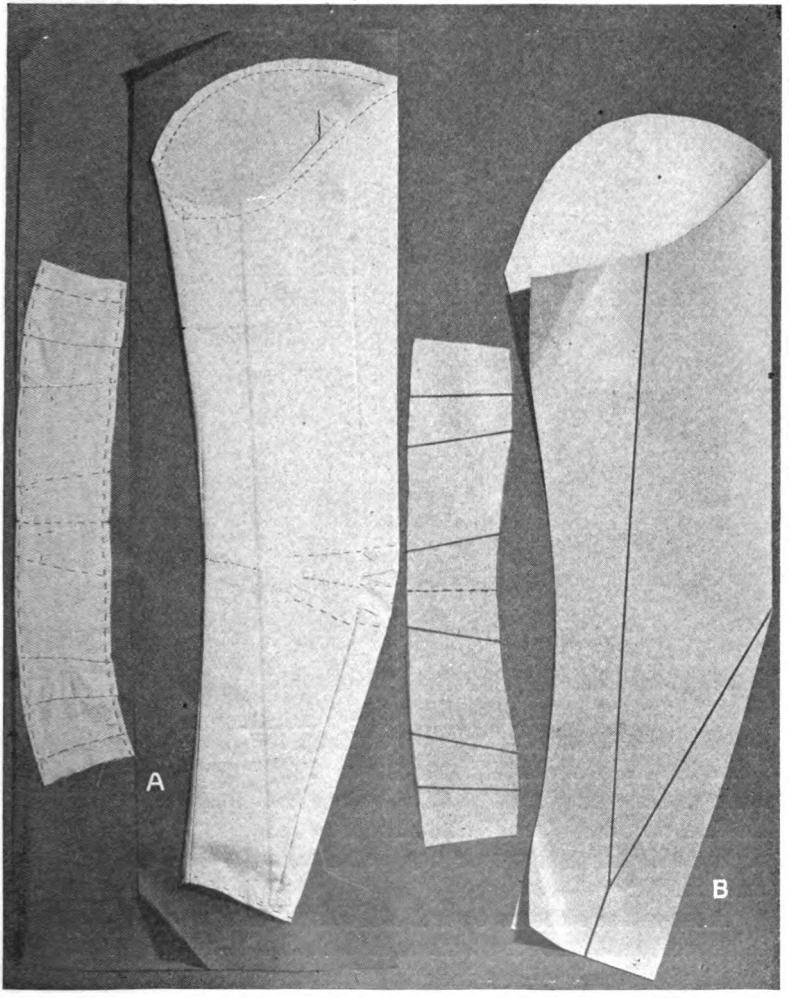

FIG. 81.—Making cardboard sleeve and collar; *A*, sleeve lining placed on folded cardboard; also muslin collar; *B*, cardboard sleeve cut out and marked; collar board also.

between the two thicknesses of cardboard and admits of sewing without catching the needle into cloth, and also of being re-folded to duplicate the other arm, after one sleeve has been made.

To Make Cardboard Form.—Fold a piece of tough, medium weight cardboard; turn fitted sleeve right side out, fold on inside seam; lay fold on back of sleeve to folded edge of cardboard (Fig. 81*A*), with under side of sleeve uppermost. Trace all around edge of sleeve; also around top of under sleeve. Cut cardboard out on tracings; find the center of the lower edge of the form; draw a line at right angles to this and two inches in length; connect this short line with the elbow point, by a straight line; also with the center of the top of under sleeve (Fig. 81*B*). This form, when opened out, shows an outline similar to Fig. 73*A*.

Collar Form.—Place muslin collar on single cardboard. Trace all around collar, center front and back, and lines for stays (Fig. 81*A* and *B*).

Padded Sleeve.—Stitch, notch and press the seams of muslin sleeve. Turn to right side and pad either with tissue paper or curled hair. The sleeve must be most carefully stuffed, so as to keep the shape of the arm and not be too heavy to use successfully in draping. Long slivers of paper drawn through the lower part of the sleeve first, make it easier to preserve a good form when stuffing the top.

Draped Linings.—Many fancy sleeves need net or chiffon linings upon which to drape the outer sleeve. These linings can be draped upon a cardboard foundation. Place the material so that the lengthwise thread follows the line of the fold in the sleeve. Allow generous seams at top and bottom. Pin seam on line of inside seam of sleeve, stretching material smooth as far as elbow; then follow the line of the seam to wrist and pin extra amount of material in a dart following the line marked on under sleeve from elbow to wrist. Remove the lining from the cardboard, sew seams (French seam). Re-fold cardboard, make the other sleeve lining. Turn the lining right side out, draw over the board ready for draping outside material (Fig. 82*A*).

Mousquetaire Sleeve Over Net Lining.—Pin material at the top of sleeve board, allowing fulness if desired. Let it fall so that the lengthwise thread follows the fold on back of sleeve. Draw material into soft folds running around the arm, pin occasionally to the net;

let the line of the seam come through the center of the under side of the sleeve so that at the bottom it will follow the line of the dart,

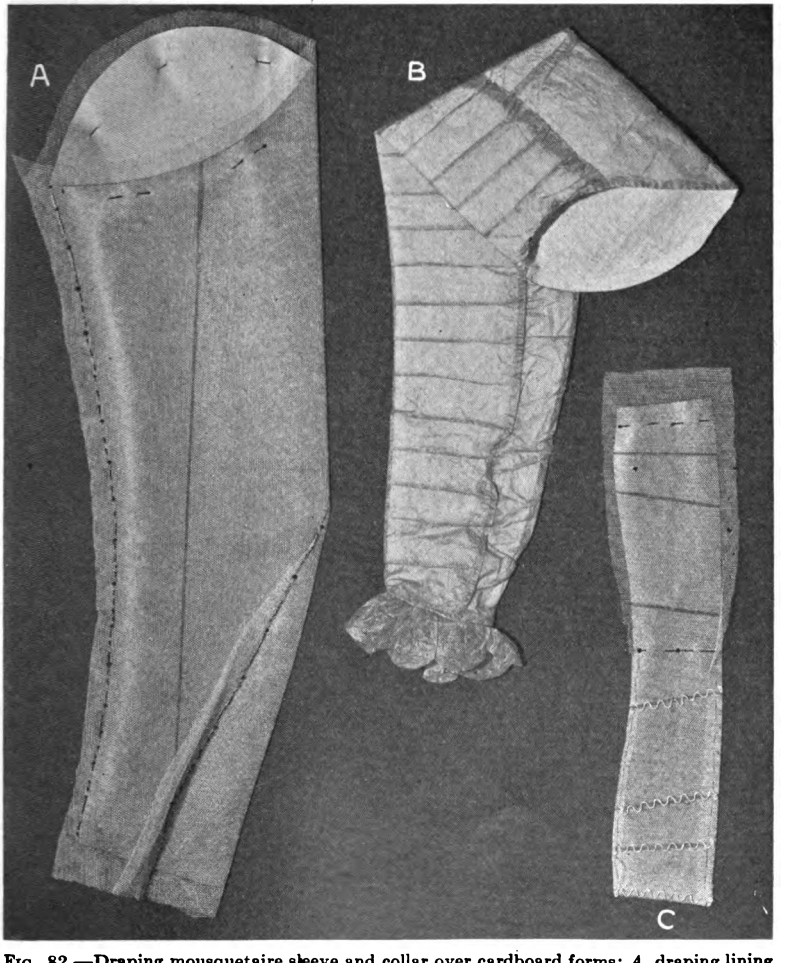

FIG. 82.—Draping mousquetaire sleeve and collar over cardboard forms; *A*, draping lining for sleeve; *B*, completed sleeve; *C*, collar, in process and completed.

to permit a closing at this point. The edge of the seam may be turned in and hemmed, finished with a cord or hemstitched. The soft fold of the draping must be tacked occasionally to the net (Fig.

82*B*). The same type of sleeve may be carried out without lining, bringing the seam in the same position.

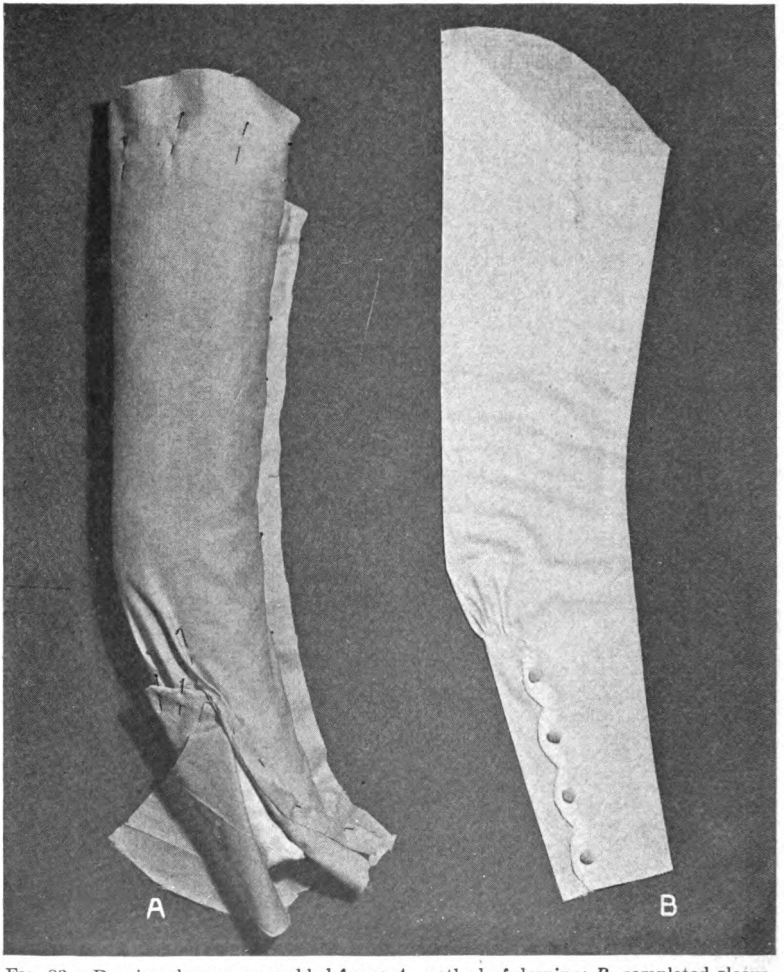

FIG. 83.—Draping sleeve over padded form; *A*, method of draping; *B*, completed sleeve.

One-piece close-fitting sleeves may be designed over the cardboard or stuffed sleeve by pinning the upper part of the sleeve with seam directly under the arm or on a line with inside sleeve seam, as far as

the elbow, and removing the fulness at the lower part, in a dart at the elbow on the under side, or by means of tucks across the sleeve on the upper part or some other device for removing the remaining fulness (Fig. 83).

DESIGNING COLLARS AND CUFFS

In designing collars, the same consideration must be given to the kind of material being used that is given to designs for other

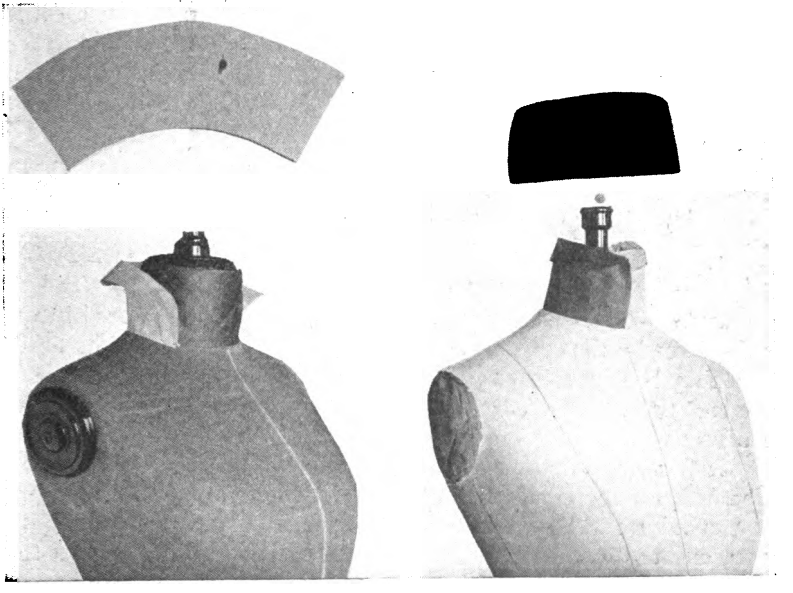

FIG. 84.—Collar designing; completed patterns standing collars, straight and curved neck line.

parts of the garment. The neck arrangement must serve as a frame for the face; therefore, the style of hair dressing, the contour and poise of the head, affect the design of the collar. Long, slender necks may wear high, close collars, when the hair is drawn close to the head and severity is sought, but if the mode of wearing the hair is a low, soft coiffure, then adopt low, flat collars. The short, fleshy neck looks better usually in a soft low, rather narrow collar, and long open neck line.

To design collars, use cambric or pattern paper. Variations of two neck lines will give the effect of flaring, flat or close-fitting collars. If a curved neck line is used, the collar can be made to lie flat on the figure, or a standing collar be made to flare; but a straight neck line will cause the collar to hug the neck more or less closely and if used with turn-over edges will flare but slightly. To make a curved collar flare a great deal, it may be fitted with curved seams in the back and at the side. The outer edges of the collar may be designed to suit one's fancy (Figs. 84–85).

Net or lace collars for guimpes, etc., may be draped on a cardboard form. Draw the lengthwise straight edge of the net along the lower edge of the board, allow one-quarter-inch seam top and bottom, one inch at ends. Pin to place, turn lower edge up, mark lines for stays with colored thread (Fig. 82*C*).

Problem I.—Using tissue or pattern paper, design a collar that will lie flat about the neck, having an outer edge shaped like a small sailor collar.

Problem II.—Design a standing collar that flares at the outer edge, and ends three inches below the shoulder seam.

Problem III.—Design a close-fitting collar that has a turned edge, pointed in the back, and sloping towards the front.

Cuffs.—The general line of the collar should be repeated in the cuffs, likewise the decoration. If one desires a plain cuff, the lower edge may be kept straight, but if a flare is desired, the lower edge of the cuff must be curved; the line of the outer edge can be made to conform to that of the collar.

Cuffs may be designed on the padded or cardboard sleeve forms. The design may be blocked out on the coardboard, points for seams and opening marked. Cuffs should open in the back or under the arm, and the placket facing be made as invisible as possible. Long sleeves over the hand and close cuffs make hands seem smaller.

Draping Skirts.—In simple tailored, or tub skirts, the lengthwise thread usually runs down the center front. If seams are used, they must fall at right angles to the waist line and conform to the lines of the body. Either straight or bias edges may come to the front of side gores, according as to whether or not a flare is desired toward the front.

Circular skirts may be plain front, lifted more or less at the side, to place the flare as desired. Whenever the skirt is lifted at the waist line, it throws fulness into the lower part of the skirt.

To drape a simple circular skirt, pin the material with the length-

wise thread falling straight down the center front of figure, allowing plenty of material above the waist line to provide for the rise in the back; lift and smooth material above the hip line until the desired

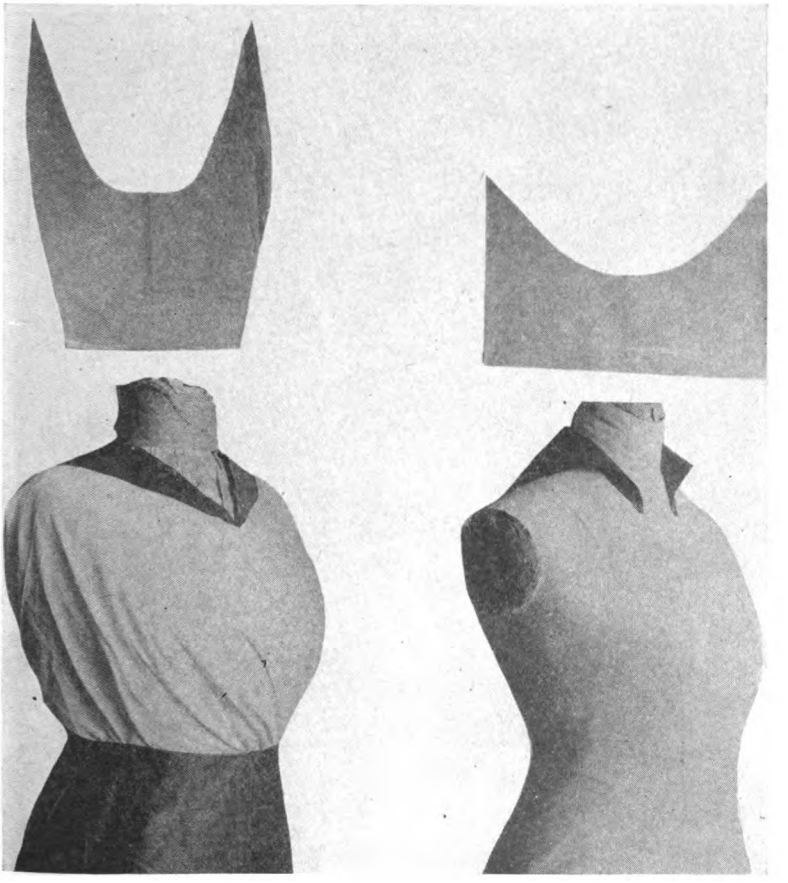

FIG. 85.—Collar designing. Flat and rolling collar; completed pattern.

amount of fulness at the foot is provided. If the extra material above the waist line interferes with the draping, cut some away and slash through the remainder at intervals to make it fit into the figure. Continue lifting the material and pinning into place until

the center back is reached; fold off the material and mark the center back line, allowing the seam. Mark the finished line at the bottom and cut off extra material (Fig. 86*A*).

FIG. 86.—Skirt draping; *A*, circular skirt; *B*, straight full skirt with cascade effect at hips.

To Drape a Gored Skirt with Panel Front.—Pin the material with lengthwise thread down the center front of figure. Pin at the waist. Mark off the desired widths at hip and bottom, conforming to the figure; fold the edge of panel, and pin, allowing seam. Place

the straight or partly bias edge of material to edge of the panel, allowing seam, and pin. Be careful to keep a good line. Pin at the waist and hip. Mark off the desired width at hip and bottom and turn back the edge of the gore or allow seam to extend, if it is a wide gore meeting a back panel. Continue in the same way marking line at the bottom when design is completed.

Problem I.—Design, on form, a simple circular skirt in tissue paper.

Problem II.—Design, on form, a simple gored skirt (four or six) in tissue paper.

Problem III.—Experiment with practice material without cutting, copying folds of drapery in fashion plates. See whether the effect has been gotten by use of lengthwise, crosswise or bias folds.

Problem IV.—Design a simple skirt for an afternoon dress, with drapery of some sort, that can be caught up by tiny bunches of artificial flowers.

Apply the principles of draping shirtwaists, sleeves, collars, and cuffs to the design of an entire dress as follows:

Proolem I.—Choose material for an afternoon dress of silk. Select design in fashion book suitable for the material and yourself. Carry out the design in detail according to suggestions given above.

Problem II.—Same as above, substituting party frock for afternoon dress of silk.

Problem III.—Originate a design for someone else, choosing fabric and decoration.

CHAPTER IX

COMMERCIAL PATTERNS: PURCHASE AND USE

Commercial patterns are cut according to a series of average measurements. These cannot, of course, account for the irregularities of form as well as the drafted-to-individual-measure pattern, but as they are to be had for almost every conceivable garment, and in endless sizes, they have come into very general use. It is well, then, that those of us who make use of them shall learn to do so intelligently.

Buying Commercial Patterns.—Buy only those of standard makes, such as have clearly marked directions for using them. Buy waists according to the bust measure, and skirts by the hip measure. The bust measure should be taken around the fullest part of the bust, an easy measure, except for tight-fitted waists, for which a closer measure should be taken. The hip measure should be taken around the fullest part of the hip, from five to seven inches below the waist, over the bone in hip, an easy measure.

To Interpret Pattern.—Before opening pattern, see that the correct size has been sold to you. Read the directions very carefully; note especially the following points:

1. The number of pieces in the pattern; their type, lining or outside, or both.
2. Study guide chart, in order to become familiar with the parts of the pattern and shape of the pieces.
3. Note which parts are lining, which outside. Decide which you will need to use.
4. Open pattern; select parts you need, fold others and replace them in envelope.
5. Note seam allowance and how indicated; also hems.
6. Note what marks are used to indicate correct placing on the material.
7. Note the markings for tucks, plaits, trimmings.
8. Have the following measures taken, by which to test and alter your pattern before cutting in material:

MEASURES FOR WAIST

Bust, around fullest part of bust, an easy measure for a shirtwaist, a close measure for a tight-fitted waist.

Length of back, from bone in shoulder to bottom of tape in waist (placed around waist to mark waist line).

Length of front, from hollow of neck to bottom of tape at waist.

Sleeve.—*Length,* inside length taken from muscle where arm joins body, to wrist bone.

Skirt.—*Waist,* around waist line, comfortably snug measure.

Hip, five to seven inches below waist, tape drawn straight around figure, easy measure.

Length, center front, hip, center back from bottom of tape at waist to floor.

Test Pattern.—All commercial patterns should first be tested by measuring patterns and comparing with the individual measure of the person, then making such corrections as are possible on the paper pattern. The pattern (except lining patterns) should then be cut in unbleached cloth or some inexpensive material to be sure that all lines are correct before cutting in the material itself. For this, follow the directions given for cutting and testing drafted patterns, being careful to remember that most commercial patterns allow for seams, in some parts indicated by perforations; in others, the allowance stated in the printed directions accompanying the pattern.

ALTERATION OF PATTERNS

Shirtwaist Pattern.—*To Increase Bust Measure.*—Draw a line straight down from the center of the shoulder, through the waist line on both pieces of the pattern. Cut through these lines and separate the pieces enough to give one-quarter of the whole amount needed on both back and front (Fig. 87*A* and *B*).

To Decrease Bust Measure.—Lay a fold extending from the center of the shoulder straight through the waist line on both pieces of the pattern, the fold to take up one-quarter of the entire amount the pattern needs to be decreased (Fig. 88).

To Lengthen Back and Front.—Cut through pattern about two inches above the waist line; separate the pieces enough to give the added length, being careful to straighten the underarm seam line

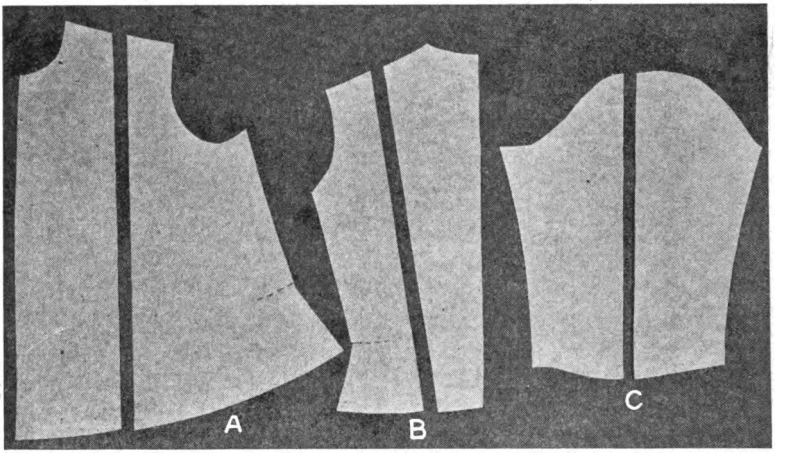

FIG. 87.—Alteration of waist patterns; *A*, *B*, increasing bust measure; *C*, increasing width of sleeve.

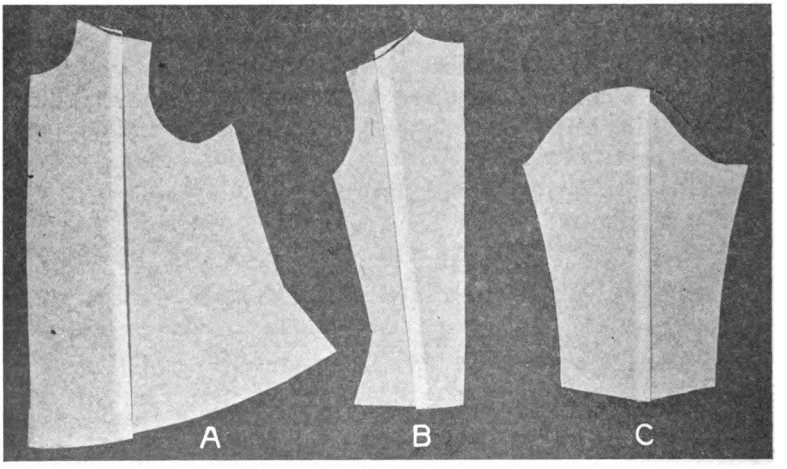

FIG. 88.—Alteration of waist patterns; *A*, *B*, decreasing bust measure; *C*, decreasing width of sleeve.

which is broken by the separation of the parts of the pattern (Fig. 89*A* and *B*).

To Shorten Back and Front.—Lay a fold through the pattern about two inches above the waist line on both back and front, the

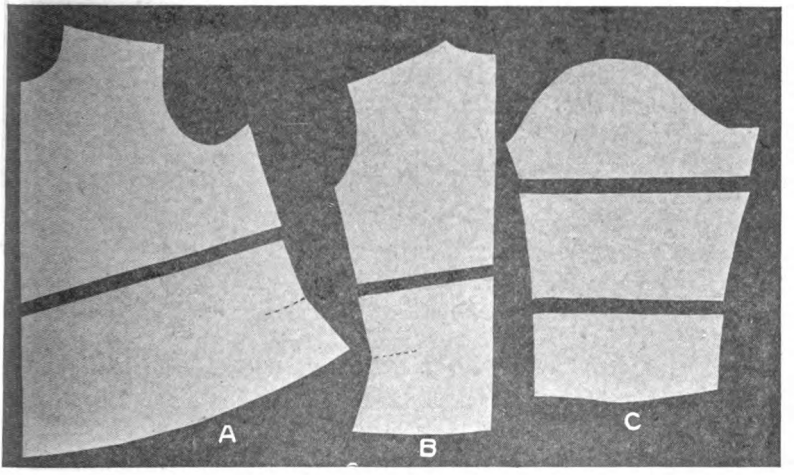

FIG. 89.—Alteration of waist patterns; *A*, *B*, increasing length of front and back; *C*, increasing sleeve length.

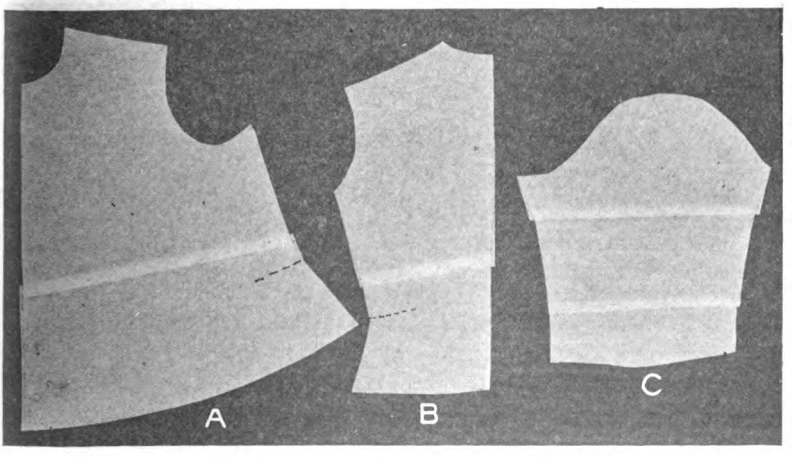

FIG. 90.—Alteration of waist patterns; *A*, *B*, decreasing length of front and back; *B*, decreasing sleeve length.

fold taking up the extra length. Straighten the underarm seam line by turning edge of patterr back on itself (Fig. 90*A* and *B*).

When the figure is extremely long and full in the bust, it is

sometimes necessary to lengthen in two places, across the chest and back, as well as at the point above the waist line.

To Alter Sleeve.—Apply the same principle for making wider or narrower, longer or shorter, as has been suggested for the waist (Figs. 87*C*, 88*C*, 89*C*, 90*C*).

Alteration of Gored Skirt Patterns.—*To Increase Waist and Hip Measure.*—Cut lengthwise through the centre of each side gore and separate the pieces sufficiently to give in all, one-half the amount necessary, adding equally to each gore (Figs. 91*C*, 92*A*).

To Decrease Waist and Hip Measure.—Lay a fold lengthwise through the centre of each side gore, take an equal amount from each gore, in all one-half the necessary amount (Fig. 91*D*).

To Increase Waist Measure.—Add a portion of the entire amount to each gore at the top, the most over the hip. Draw new lines from these points to the hip line (Fig. 92*B*).

To Decrease Waist Measure.—Reverse the above. Draw new lines, continuing to hip line (Fig. 93*B*).

To Increase Hip Measure.—Add to each gore at hip line (greatest amount over hip), enough in all to correct the measure. Redraft line from hip to waist, and hip to bottom (Fig. 92*C*).

To Decrease Hip Measure.—Reverse above. Necessary to redraft line from hip to waist and hip to bottom (Fig. 93*A*).

To Lengthen Pattern.—Cut pieces of pattern across about twelve inches below waist line, separate the pieces sufficiently to give the required length, allowing the same on each (Fig. 91*A*).

To Shorten Pattern.—Reverse of above. Lay fold at same point, to shorten length, unless a great deal has to be taken up, in which case some could be taken from the bottom (Fig. 91*B*).

To Alter Yoke Pattern.—If the waist measure is too small, slash pattern at waist line and spread apart until correct waist measure is obtained. Lap slashes if the waist is too large.

Alterations for Irregular Figures.—The commercial pattern is based on the lines of a normal erect figure. Certain alterations in the pattern for those who do not stand erect will save a good deal of fitting and possible dissatisfaction. For the woman whose hips and abdomen push forward as she stands, a tuck one-eighth to one-quarter inch deep will need to be taken in the back of the first gore of the pattern, and carried to nothing beyond the center of the gore. This will throw fulness into the front side of the gore, which pre-

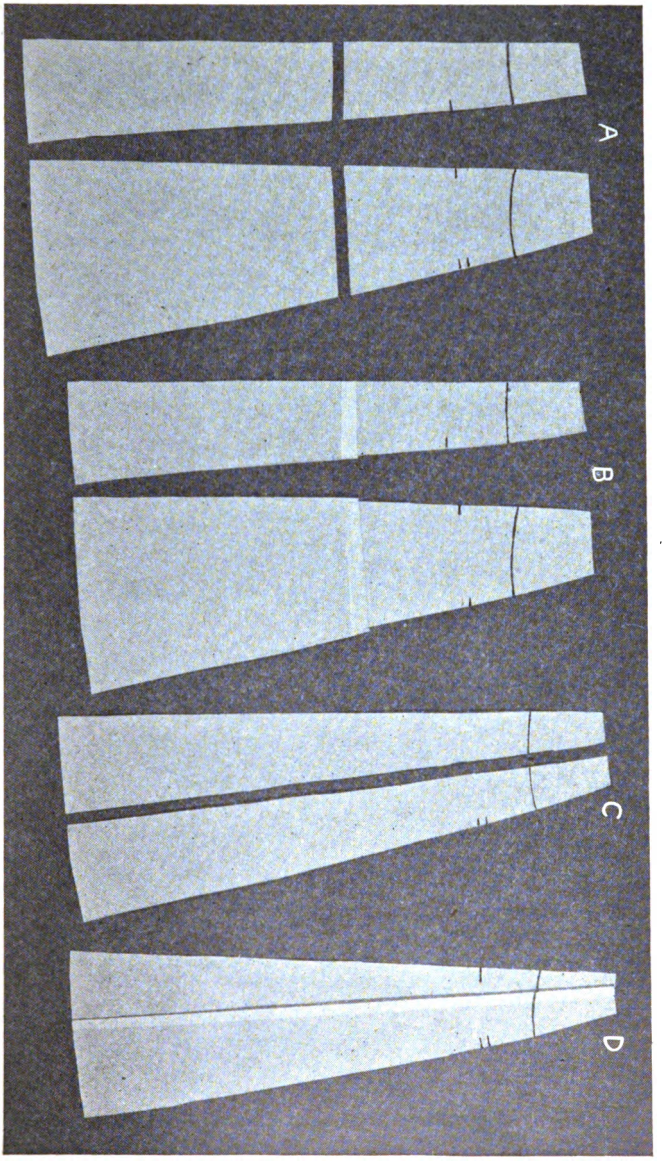

FIG. 91.—Alteration of skirt patterns: *A*, increasing length of skirt; *B*, decreasing length of skirt; *C*, increasing waist and hip measure, also width at bottom; *D*, decreasing waist and hip measure, also width at bottom.

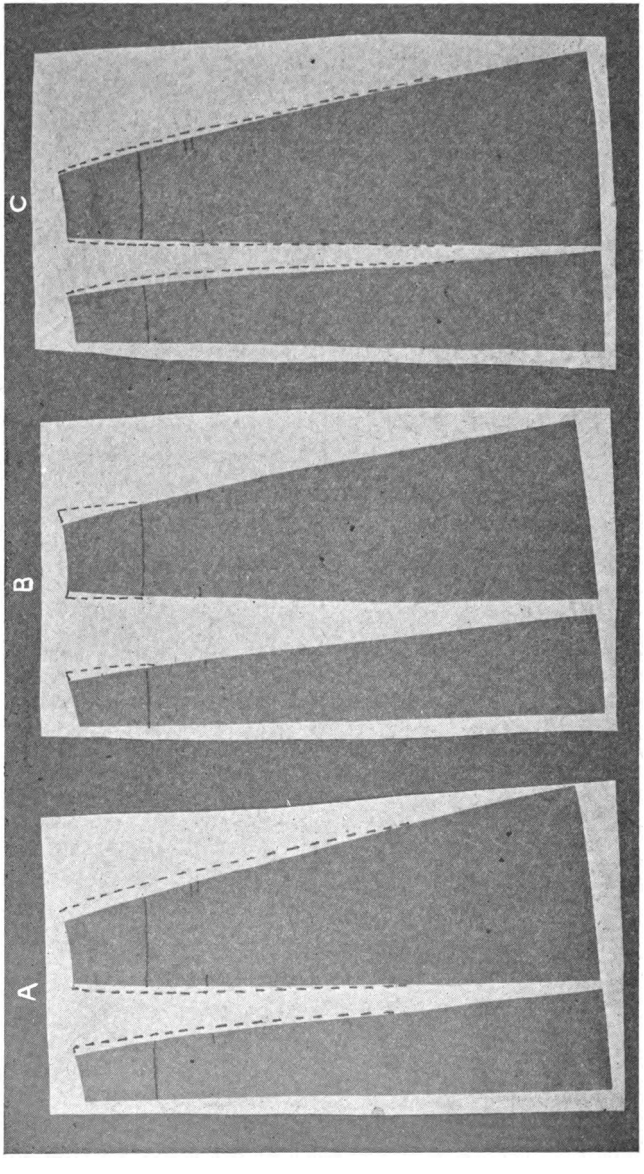

FIG. 92.—Alteration of skirt patterns; *A*, increasing waist and hip without increasing width at bottom; *B*, increasing waist measure; *C*, increasing hip measure.

vents the whole skirt pushing forward, at the bottom, as it otherwise would. When this fault of posture is very marked, it will be necessary to add to the top of the front gore and top of the first side gore, sloping to less at the back of the gore; add the same amount to the top of the second side gore at the front, and slope to nothing at the back. The waist measure would also need to be increased.

An excess of flesh, or over-development of muscles on the hips, will cause a skirt, otherwise correct, to hang badly. To correct this,

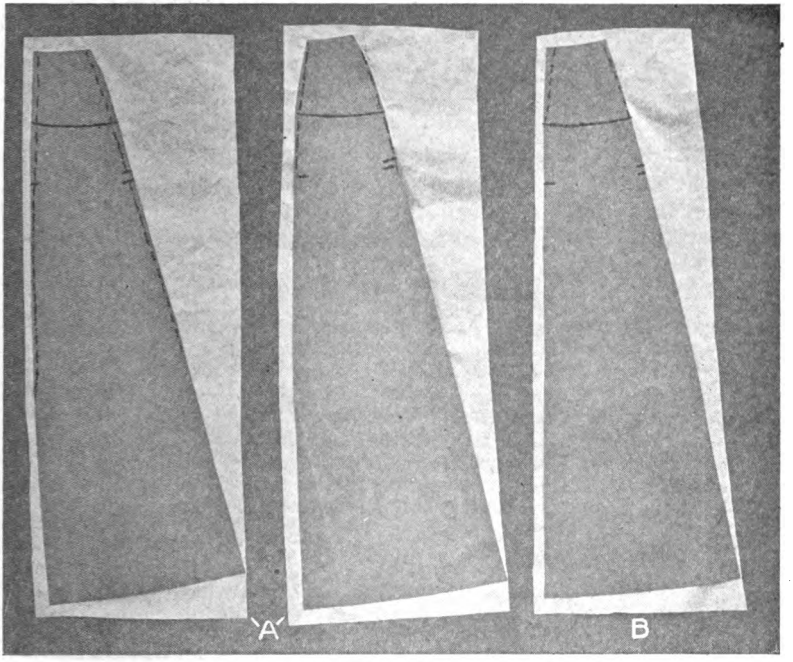

FIG. 93.—Alteration of pattern; *A*, decreasing hip measure; *B*, decreasing waist measure.

lay a tuck one-eighth to one-quarter inch deep and six to eight inches below the waist in the back of the second side gore, sloping it to nothing beyond the center of the gore.

Tight-fitted Waist Pattern.—This should be tested as carefully as the shirtwaist pattern. The principles applied to alterations in shirtwaists will also apply to this type of waist. In testing the bust measure, be careful to keep within the seam lines. A neces-

sary increase or decrease of the bust measure can usually be taken care of in the seams, instead of by enlarging the pattern, as there are more seams which permit this.

To Lengthen Waist.—If only a small amount needs to be added to the length, cut the pieces of the pattern about two inches above the waist line, and separate them sufficiently to give the necessary amount. If the figure is very long from the shoulder to the bust, it may also be necessary to cut the front, side front, back and side back pattern across the widest part of the back and front, and separate the pieces for additional length.

To Shorten Waist.—Fold a tuck in the pieces of the pattern, to reduce the length.

To Alter Sleeve.—Treat in the same manner as you would the shirtwaist sleeve, both above and below the elbow, if necessary, to lengthen or shorten. The width of the sleeve may be taken care of in the seams, unless a great deal of difference occurs. If the latter, follow directions for same alteration in shirtwaist sleeve.

SUGGESTIVE QUESTIONS

1. What is the advantage of using a commercial pattern?
2. How would you interpret a commercial pattern?
3. How would you alter a waist pattern that measured too small in the bust? A sleeve that was too short?
4. How would you change a gored skirt pattern measuring thirty-six inches at the hip, for a person measuring forty inches at hip? If the same pattern were too long, how would you correct it?
5. At what part of the waist pattern would you fold it to decrease the length? Where fold skirt pattern for the same alterations?

PART III

CONSTRUCTION OF CLOTHING

CHAPTER X

EQUIPMENT AND TOOLS, PROCESSES INVOLVED IN THE CONSTRUCTION OF GARMENTS

THE purpose in learning to make underclothing is threefold: (1) To gain an understanding of economic values through the purchase and handling of materials, (2) to learn to appreciate and express through this medium, a feeling for simplicity of design and daintiness of attire, and (3) to acquire, through technical processes, skill and speed in the use of materials and equipment.

While there is much that is new to be learned on each garment, at the same time, some of the processes are very similar; for instance, the making of seams, certain finishes, and the application of trimmings. The making of each garment will be treated independently, but it has seemed best to set down in outline form the points to which attention must be directed in the planning and making of undergarments. Explanation of processes which may be exactly the same in two or more garments, as in the case of seams or decoration, will precede the problems of construction. For the sake of those who may have forgotten, or may not have had instruction in fundamental stitches, a brief review of these and their uses will be given, in order that the directions for the construction of the garments themselves may be more intelligently followed.

Following is an outline of the points to be considered, and the steps to be followed in making undergarments:

I. Designing
   1. Types of garments
   2. Suitable material — Selection
   3. Suitable trimming — Calculations — quantity, cost
   4. Suitable patterns — Purchase

II. Constructive processes:

(a) Tools and equipment for ....
   1. Pattern making
   2. Designing
   3. Construction

(b) Stitches (review)
   Review of those previously learned to be applied to new problems

(c) Cutting garments.....
   1. Preparation of material
   2. Placing pattern
   3. Cutting
   4. Marking seams

(d) Basting.....
1. Pinning seams
2. Sewing seams

(e) Fitting.....
1. Adjusting to figure
2. Correcting
3. Altering
4. Second fitting

III. Making:

1. *Seams*

(1) Plain.....
Single seam
Two raw edges overcast
Petticoats
Dress skirts
Aprons

(2) French....
Double seam
Seam stitched; turned within; second stitching
Corset covers (entre-deux, use of)
Underbodices (entre-deux, use of)
Night-dresses
Petticoats
Lingerie dresses

(3) Fell.....
Flat finish; double sewing
Stitched; one edge trimmed, other turned twice; (1) hemmed, (2) overhanded or (3) stitched down
Corset covers
Drawers
Petticoats
Flannel fell, flat finish
Second edge stitched once, catch-stitched down
Flannel petticoats

2. *Finishes*

(a) Lower edges...
1. Petticoats 3. Gowns
2. Drawers 4. Sleeves

(1) Hems..
1. Plain
2. Faced or False — Straight or Shaped edge

Decoration.....
Hemming, running
Machine stitching
Feather or chain stitching
Fagoting
Embroidery edging as facing
Lace stitched to hem before hem basted

(2) Scalloping banding
1. Embroidered scallops
2. Bias bands same material (for plain petticoats)

- (3) Ruffles and flounces..
  - 1. Straight
    - a. Gathered } Flounce or
    - b. Tucked } dust ruffle
  - 2. Bias
    - Gathered
    - silk or satin for petticoats
  - 3. Circular
    - a. Single for drawers
    - b. Sectional for petticoats
  - Decoration.
    - 1. Self
      - a. Tucking
      - b. Banding
    - 2. Lace embroidery.
      - a. Edging
      - b. Insertion
      - c. Entre-deux
    - 3. Finishing braids
    - 4. Machine stitching
    - 5. Stitching
- (b) Openings and plackets
  - 1. Box plaits
    - 1. Corset cover
    - 2. Underbodice
    - 3. Night-gown (right hand side for buttonholes)
  - 2. Hems....
    - 1. Corset cover
    - 2. Underbodice
    - 3. Night-gown (left hand side for buttons)
    - 4. Invisible fastening } Hem and fly for buttons and buttonholes
    - 5. Narrow hems each side petticoat opening
  - 3. Facings
    - I. *Straight*
      - 1. Continuous
        - (a) Corset cover } Visible and
        - (b) Drawers } invisible
        - (c) Petticoat } fastening
      - 2. Two piece
        - (a) Drawers
        - (b) Petticoat
    - II. *Bias*
      - (a) Corset cover, armhole
      - (b) Drawers — Open, to finish edge and top
      - (c) Petticoat — Silk, lower edge and waist line
  - 4. Fastenings
    - 1. Buttonholes
    - 2. Buttons
    - 3. Tapes
    - 4. Hooks and eyes } Silk petti-
    - 5. Snap fasteners } coat
- (c) Waist line..
  - 1. Disposal of fulness
    - 1. Gathers
    - 2. Tucks
    - 3. Plaits
    - 4. Darts
    - 5. Seams

- (c) Waist line.—*Continued.*
  - 2. Bands..
    - 1. Material
    - 2. Beading
    - 3. Insertion
    - 4. Tape
    - 5. Elastic (silk petticoat)
    - 6. Belting (silk petticoat)
  - 3. Facings..
    - 1. Lengthwise
      - a. Corset cover
      - b. Night-dress
      - c. Petticoat
      - d. Drawers
    - 2. Bias
      - 1. Drawers
      - 2. Petticoat (silk)
  - 4. Peplum..
    - 1. Circular
      - Lower edge of corset cover
  - 5. Fastenings..
    - 1. Buttonholes
    - 2. Buttons
    - 3. Tapes
    - 4. Hooks and eyes } Silk petticoat
    - 5. Snap fasteners }
- (d) Neck line..
  - 1. Fulness.....
    - 1. Narrow tucks
    - 2. Gathers } drawn up
    - 3. Eyelets } by ribbon
  - 2. French hem..
    - 1. Plain or decorated with featherstitching
      - Beading overhanded to hem
      - Lace overhanded to beading
    - 2. Lace overhanded to hem with eyelets below to draw ribbon through
  - 3. Gathers.....
    - 1. Entre-deux
      - fulness set in with seam bound with edge of entre-deux
    - 2. Finishing braid
      - or
      - Bias band: featherstitched set over gathers; lace overhanded to band
    - 3. Edge rolled and whipped and overhanded to beading or lace
  - 4. Embroidery.
    - 1. Buttonholed scallops on edge; eyelets below for ribbons
  - 5. Lace on raw edges ....
    - 1. Lace beading insertion or edge whipped to raw edge of garment

- (d) Neck line.. —*Continued.*
  - 5. Lace on raw edges —*Continued.*
    - 2. Lace hemmed (lower edge) to right side garment; neat cut away on under side; raw edge material whipped to self; beading, or footing (folded to form casing) overhanded to upper edge of lace
    - 3. Lace fagotted (Bermuda fagoting) to material; raw edge of material cut away
  - 6. Embroidered, edging insertion or entre-deux
    - 1. Embroidery beading or insertion: plain edge used for facing; gathers placed just below embroidery
    - 2. Edging gathered and set into entre-deux or beading. Garment also gathered and set into other edge of beading with French seam
    - 3. Edges of insertion or entre-deux, cut close to embroidery; lace overhanded to it, or edge of cloth left beyond $\frac{1}{8}$ inch, and lace whipped to raw edge of this
  - 7. Ribbons, etc.
    - 1. Wash ribbon: Plain and figured, preferably white, or dainty colors
    - 2. Lingerie braid
    - 3. Bobbin (linen)
- (e) Armhole and sleeves (lower edge)
  - 1. Corset cover — Armhole similar to neck, usually omitting ribbon beading
  - 2. Sleeves.....
    - a. Corset cover
    - b. Night-gown
  - Armhole....
    - a. Set in with plain seam and bound with bias strip of material
    - b. French seam, using entre-deux
  - Lower edge... Repeat neck finish.

DESIGNING UNDERGARMENTS

The first thing to be considered when planning a suit of underwear is the type of garment to be made. Dear to every woman's heart is a dainty bit of lingerie, and it is right that it should be so, but her care should be that she choose the sort of garment (1) that

will be in keeping with her outer apparel, (2) not strain her purse, nor (3) burden herself or others with the care of laundering.

1. **Type.**—In choosing the type, fitness is of great importance. For instance, for wear under dresses of wool, silk or linen, the corset cover or underbodice may be made of firmer material, and less elaborately trimmed than for wear with lingerie waists and summer dresses. White cotton petticoats, either plain or trimmed, are not in keeping with the dark wool, silk, or linen dresses. These bespeak colored silk or cotton petticoats. By no means, however, need there be absence of decoration, but this should be of simple kind. On the other hand, for wear with lingerie waists, one instinctively desires a little more elaboration on the undergarment. This instinct needs to be held in check until one learns how not to mar the pleasing effect of the outer-garment by the selection of the under. How often one sees a very attractive waist, simply trimmed perhaps, with tucking, lace or hand embroidery, beneath which shows a corset cover adorned with rows of lace insertion or huge medallions, which immediately contradict the graceful lines and curves of the waist. Because of the quantity needed "to trim" the undergarment, the wearer may have used inexpensive lace of large pattern. Better far to have confined herself to less lace of good quality and recognized pattern, that would in no way irritate the beholder's sense of the fitness of things. Just here, in speaking of the effect of decoration, it may not be amiss to mention neck and armhole lines in corset covers and underbodies. A round neck cut as low as may be desirable is usually more pleasing to the eye when seen beneath the waist than is the square or V-shaped line. The latter seem to be continually at variance with the lines of the outer-garment, or where the back of the waist is plain, the undergarment stands out too prominently. Care must be taken in marking the line for a round neck, to have the lowest point in the back in proportion with the length of the back. The curve in the front should always drop below the curve in the back. The undergarment must be subordinate to the outer; in other words, serve only as a good background for a pleasing picture. Again, the picture should not be marred by the appearance above the corset cover of the top of a refractory undervest carelessly adjusted.

Corset Cover.—It is to be remembered, then, that the design for corset covers and underbodices should be simple in line and decora-

tion, the latter confined mostly to the neck and armhole, except perhaps fine tucking or simple stitchery on the front, richness to be obtained by the use of fine material, dainty lace of good quality and pattern, embroidered edging, insertion and beading, having similar background to the material of the garment.

When underwear is to be made up in sets, the ornamentation should be similar throughout, and the same lines used on the neck of corset cover and night-dress. When odd garments are being made up, if a square or V-shaped neck is desired, this idea might be carried out in the night-dress.

Night-dresses.—The cut of the dress may be either kimono (body and sleeves in one), or the regulation night-dress with gathered sleeves; the length of the sleeves and line of the neck may please the fancy of the wearer, or follow some mode prescribed for reason of warmth in cold weather. From the stand-point of wear, it is claimed that the kimono type of night-dress is not as satisfactory, because of the strain on the seam under the arm. This can be prevented by the use of a gusset.

Petticoats.—Cotton petticoats for every-day wear under linen or cotton skirts should be flat in finish, so as not to spoil the "set" of the outer skirt. Keep ruffles and fluffiness for the petticoat to be worn under soft silk and lingerie dresses, unless the outer skirts are very wide.

Silk petticoats may be full or extremely plain and flat in finish to meet the need of prevailing fashions in outer skirts. A flounce on a silk petticoat will not crowd an outer skirt as much as the same on a cotton petticoat. Flounces, however attractive, may be made veritable dust-traps, which is contrary to good sense.

Drawers.—It is not difficult to carry out the same form of decoration on drawers that has been planned for the rest of the garments. A flat finish is preferable, but for those who like the drawers to cover the knee, a ruffle set on the bottom of the leg of the drawers admits freer movement of the limbs. This may be of other material than the body of the garment.

2. Cost.—In designing undergarments, as in all other apparel, the limits of the purse must be kept in mind. It is not always possible, neither is it profitable in other ways, to give full expression to the desire for ornamentation. When the amount to be spent on underwear has been apportioned, the necessary ready-to-wear gar-

ments provided for, then the number of garments, or sets of garments to be made, must be decided upon, the material, style, cut and decoration planned. Charming effects can be produced with little outlay of money, if one has the time and inclination to spend on bits of hand-work, that greater expense may be allowed for the material in the body of the garment. Never make the grievous mistake of putting all on one garment to the sacrifice of others. It is always a good plan to have a "Sunday best" suit on hand, however, on which perhaps more time and labor, if not money, has been spent. Numerous suggestions for attractive, but inexpensive decorations, will be given later. It is interesting to plan, and see what can be done with the allowance one has to spend. The computed cost of several of the garments shown in the illustrations is given in the "Budget," pp. 13–14–15, as a guide in problems involving expenditure for undergarments.

Materials.—One needs to be very familiar with materials, as to characteristics, quality, price and width, in order to make a wise selection of that which is both desirable and suitable. Knowledge of the use of patterns helps materially in planning designs because one can quickly estimate the quantity of material and trimming required. The fabric to be used affects the plan of the design, and *vice versa*. If durability is the only basis of our choice, then the design must conform to the characteristics of a fabric which will fill that requirement. If the garment is to be made for occasional wear, with light outer garments, then a finer fabric should be chosen, hence the design must be so worked out as not to overweight the material. If fine material seems necessary and the purse is limited, then plan the design to require very simple decoration. Reference to the list of materials suitable for undergarments, given on pp. 34 and 41, will greatly help in the choice of suitable fabrics.

3. **Laundering.**—Last but not least in the consideration of the garment maker should be the question of the laundering of the garment. Where there is ample income and it becomes the duty of one person to perform this task, there need not be so much thought bestowed upon it; but when the work must be done, especially the ironing, by some member of an otherwise busy family, an overworked mother, perhaps, or the wearer herself, who is busy from one week's end to another with other work, then indeed should the choice be made of the type of garments that will be easy to "do up"

and where possible, a number of the crêpe garments that require no ironing at all.

Patterns.—Upon the cut of a garment depends not only its style, but comfort also. Drafted to measure patterns should, if carefully made, embody both features. Discrimination must be used in the choice of commercial patterns. Those which provide a generous seam allowance, furnish clear working directions, and guide one somewhat as to the necessary quantity of material to buy, are to be recommended. One can best judge by trying various makes and comparing results. Then unless the policy of the pattern company changes, one should be reasonably sure in her choice. Sometimes, one make of pattern may prove satisfactory for undergarments, another for outer, and *vice versa.*

TOOLS AND EQUIPMENT

Tools.—We should become familiar at the very outset with the names of the tools we shall need, their use, and the manner of taking care of them. Following is a list of such:

Needed in clothing construction	Thimble, of good material Tape-measure (good one; stitched on both edges; sateen best) Pins, dressmaker's steel points, one-quarter lb.box Pin-cushion (cloth stuffed with curled hair; always filled with pins Needles: Milliner's for basting, ground downs for very fine sewing, sharps for sewing and dressmaking Emery, to smooth needles Scissors: Small, sharp points for ripping; small shears for cutting; medium size if desired; buttonhole scissors Tracing wheel, good points, to mark seams on cotton and linen Tailor's chalk, to mark seams Stiletto, for punching eyelets Bodkin, for running tape through casings Safety pins: To fasten to end of belt or fold which you wish to turn right side out. Push pin through after fastening, and it draws material with it
Needed for pattern making	Tailor's square (for drafting patterns) Pattern paper (Manila heavy, light tissue) Pencil, soft Eraser Tape-measure Pins Pin-cushion Needles (milliner's for basting) Note-book Small ruler

Needed in designing...	Tailor's square Pattern paper (Manila, heavy, light tissue) Unbleached muslin Cheese-cloth Cambric Tape measure Pins Pin-cushion Needles (milliner's, sharps, 7-9) Fashion plates Costume prints

A certain amount of care is necessary in order to keep tools, especially those of steel, in good condition. Never let scissors, needles, steel pins, bodkins or tracing wheels, lie exposed to the damp air. Do not leave steel pins in a cushion for long at a time in summer. They will rust very quickly. Do not use good scissors to cut wire, paper or any harsh substance, like buckram; haircloth will also turn the edges of the blades. Keep the shears and scissors well sharpened, and do not trust them to indifferent workers. Seem selfish, if must be, about loaning your tools; no one will care for them as you do. Fold your tape measure when putting away. It takes up less room and keeps in better condition. A pasteboard box long enough to take your shears, or a work-basket, are suitable receptacles for all the tools at the close of a period of work. If grouped together, then no loss of time ensues at the beginning of another period in looking up the wherewithal for work.

Equipment.—We should also familiarize ourselves with the pieces of equipment essential to good workmanship. The following should be noted:

Sewing machine	Standard make and full equipment, tools and attachments
Cutting table	Heavy, high, steady (36 inch); smooth but unvarnished, so tracing can be done at will. High enough to admit use of foot-rest and chair reasonably high
Dress-form	Padded to fit linings for use in draping and designing
Sleeve-form	Padded lining or cardboard sleeve
Pressing boards	Skirt boards, for large pressing Sleeve boards, for sleeve pressing Tailor's boards, for heavy pressing and shrinking Small seam board, used to press seams of waists, sleeves, etc.
Press cloths	Heavy duck, square of width, for thorough dampening

Cheese cloth.....For light pressing
Sponge.....For dampening parts of garments
Pan.....For water

Irons..... { Light / Heavy

Wire stand upon which to invert an iron for steaming velvet or cloth
Tea-kettle.....For steaming materials
Wax.....For smoothing iron
Sand-paper or salt.....For cleaning iron
Long ruler, 45 inches
Manila paper.....Heavy for patterns (roll)
Pattern paper.....Medium for patterns (sheets)
Tissue paper.....Large sheets for draping and padding

Whisk-broom..... { For brushing up cloth when pressing, and threads from garments

Mirrors..... { Full length / Hand / Triple

Cleansers..... { Ivory soap, to apply with cold water to oil spots from machines on cotton, linen or wash silk / Magnesia, block. Rub on both sides oil spots on silk and wool. Press with warm iron between sheets soft Manila paper. Repeat until spot disappears

Tracing board..... { Heavy cardboard, covered with paste made of carpenter's chalk grated and mixed with water, and laid on with thick brush, the whole covered with a piece of heavy white curtain net. Saves time in marking seams on materials that do not take tracings

Skirt-marker.....For marking hem lines on skirts
Pinking machine.....For pinking seams, ruches, ruffles, etc.

Bias folders..... { Metal folders in a set of several widths for turning edge on bias folds before pressing

Set of hem-markers.....Various widths ready for use

Coloring matter for laces, etc. { Saffron leaves, steep and dip lace / Ochre powder, use dry powder in box and shake lace about in it / Tea solution, dip lace / Coffee solution, dip lace / Always test with sample before using finally / Tintex, coloring for lingerie waists

Soap..... { Dry, hard piece of white soap to rub over material from which you wish to draw threads, to make them slip easily; also rubbed over thick seams to help them to pass easily under presser foot of machine

The Sewing Machine.—Can you imagine an engineer who is so unfamiliar with the parts of his engine, and their relation to each other, that his ear will not detect at once the slightest break in the rhythm of the motion, bespeaking something amiss, and telling him just where the difficulty lies? Just as familiar should you be with your sewing machine. You should know equally well how to use and care for it, and understand its parts in relation to each other, so that minor difficulties can be adjusted by yourself without loss of time or expenditure of money. It is hoped that the brief survey which follows may help you to understand better how to handle your machine.

Equipment

Oil can
Cloth and Brush } for cleaning machine
Screw-driver ..... { Large / Small
Pick
Small pair pincers
Wrench
Strap-cutter and punch
Attachments ..... { Hemmers / Binder / Ruffler / Tucker / Gauge / Quilter-gauge

Machines are of two types, single-thread with automatic tension, and double-thread or lockstitch, with adjustable tension. An explanation of these terms follows.

Parts of Machines and their Functions.—Spindle or Spool Pin, on which the spool of thread is placed.

Automatic tension (on single-thread machine), which controls the amount of thread pulled from the spool.

Pull-off, which pulls thread from spool.

Take-up, which pulls thread up from needle as each stitch is completed, and tightens the stitch in material.

Needle-bar, to lower end of which the needle is attached.

Needle.

Presser-foot, which presses down on the material to be sewed, holding it firmly against the *feed.*

Presser-foot bar, to lower end of which the presser-foot is attached.

Presser-foot lifter, small handle by which *presser-foot* bar is raised and lowered.

Feed.—The metal bars with roughened surfaces, which move forward, upward, backward and downward through an open space in the *Cloth Plate* immediately beneath the presser-foot, and pull

the cloth toward the needle for each stitch. The distance which the *Feed* moves backward, pulling the cloth with it, determines the length of the stitch and is regulated by the "*Stitch Regulator*" in double-thread machines (a thumb-screw on the arm at the right). On single-thread machines there is a small slot in the front of the cloth-plate, through which numbers can be seen. These are moved by a handle under the *Cloth Plate.* The numbers range from twelve to thirty stitches to one inch, and are changed to suit the size of the thread used and the material to be sewed.

Cloth plate, the metal plate over which the material passes while being stitched.

Bobbin, the metal spindle on which the under thread of a double-thread machine is wound.

Bobbin case or shuttle, which encloses the bobbin, and by rotating, vibrating or oscillating motion, interlocks the under and upper thread to form the stitch.

Bobbin Winder.—An attachment on the arm of the machine near the balance wheel, upon which the bobbin is placed; the end of thread from the spool is wound around the bobbin and then the winder is pressed down against the strap, and the machine operated in the usual way to fill the bobbin with thread. Before starting the machine, a thumb-screw or lever in the center of the balance wheel must be turned so as to break the connections between the balance wheel and other parts of the machine, and prevent wear and tear of needle and feed while the bobbin is being wound.

Treadle, upon which feet are placed when running the machine.

Band-wheel, which holds the leather band or strap by means of which the power is transmitted from the treadle to the balance wheel at the right of the arm of the machine above the table; thence the power is transmitted by means of a shaft to the shuttle or looper beneath the cloth plate; other connections carry the power to the tension, pull off, take up and needle bar.

Pitman, rod connecting treadle with band wheel.

Use of Machine.—When learning to use a sewing machine one should first practice "treadling"; to do this do not have any thread on the machine (or at least do not leave the thread in the eye of the needle), and have the presser-foot up. Place both feet on the treadle, start the machine by moving the balance wheel, and then try to keep the machine in motion by moving the feet up and down

on the treadle. Do not press hard with the feet, let them ride easily on the treadle; practice until an even motion is acquired. Then take a long strip of paper (newspaper answers very well); place it beneath the needle, lower the presser foot, and still without thread in the needle, make a line of stitching in the paper, guiding the paper with the left hand so that the edge of the paper or the printed column runs an even distance from the side of the presser-foot, thus making a straight line of stitching. When a straight line has been obtained, thread the needle and try again, using a piece of cloth, plain or striped. Now take the machine instruction book, study out the directions for threading the upper and under thread and the correct way of starting and finishing or fastening a line of stitching. When proficient in plain stitching, study out the use of each attachment.

Take good care of your sewing machine; clean thoroughly once each week, using a small stiff brush to clean out around the feed, where lint from materials collects; and oil with a good grade of machine oil. If the machine is in constant use it should have a few drops of oil each night before closing.

SUGGESTIVE QUESTIONS

1. For what purpose should a girl learn to make undergarments?
2. Name four processes involved in garment construction.
3. Name and explain the use of six parts of a sewing machine.
4. What equipment would you suggest for a sewing-room at home?
5. Name and describe three methods of finishing the necks of corset covers.
6. When designing undergarments, what points should be considered?
7. What is your idea of a daintily trimmed suit of underwear?
8. Calculate the quantity and cost of materials for a set of underwear with simple decoration. Describe the same.
9. What arguments can you mention in favor of plain undergarments?

CHAPTER XI

CONSTRUCTIVE PROCESSES: STITCHES

Running Stitch.—Form: A line made by a portion of sewing thread passed over and under an equal or unequal number of threads in the cloth.

Use: (1) Basting, (2) seaming, (3) tucking, (4) gathering.

To make: Take up a little cloth, pass over same amount or more (Fig. 94).

Basting.—(Not a permanent sewing; used only to hold edges of cloth together until firmly sewed.) There are two types of bast-

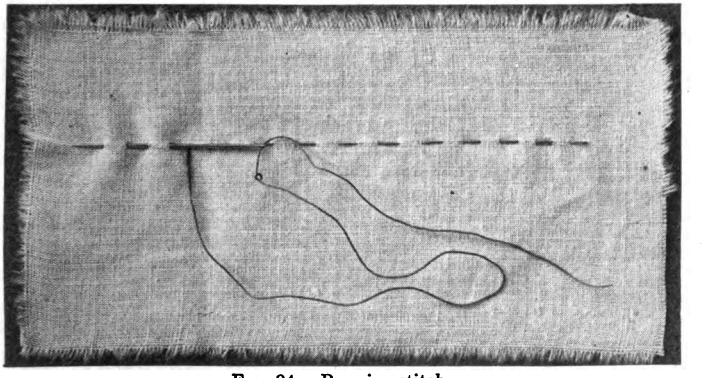

FIG. 94.—Running stitch.

ing, even and uneven. Always use a knot; fasten by taking two or three small parallel stitches diagonally across the cloth above the end of the basting. In removing basting stitches, clip the thread at intervals, to prevent tearing the material as they are withdrawn.

1. *Even Basting.*—Form: Stitches of equal length on both sides of cloth (Fig. 95).

Use: Where there is strain on a seam, or possibility of slipping, as in fitting corset covers, petticoats or gowns.

2. *Uneven Basting.*—Form: Longer stitch on upper side than on under.

(*a*) *Guide Basting.*—Form: Short stitch on under side of cloth, long stitch on upper side (three to four times under stitch).

Use: Guide for stitching seams and hems (Fig. 96).

(*b*) *Dressmaker Basting.*—Form: Long stitch on upper side of cloth, followed by two or three even basting stitches; repeat.

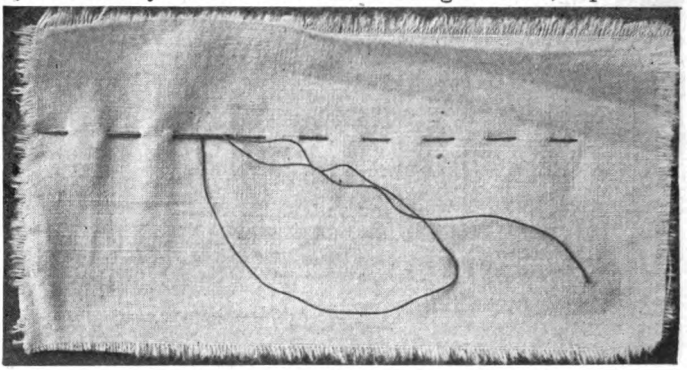

FIG. 95.—Even basting.

Use: Holding two thicknesses of material, wool or silk, securely for stitching seams (Fig. 97).

(*c*) *Diagonal Basting.*—Form: Short vertical stitch on under side of cloth, long stitch diagonally across upper; repeat.

Use: Basting linings to outside materials (Fig. 98).

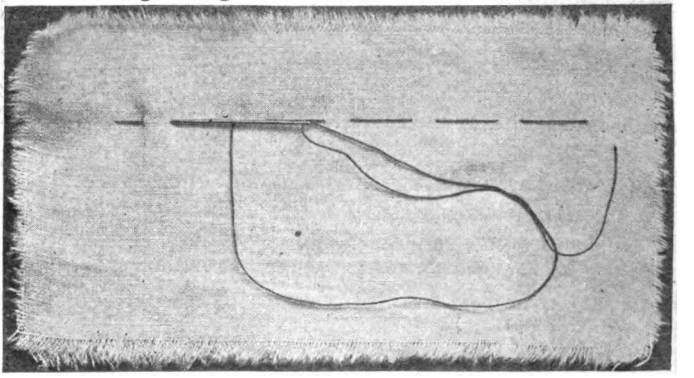

FIG. 96.—Guide basting.

Seaming Running Stitch.—Use: Joining two pieces of cloth to form a seam (plain); first sewing of a French seam (Fig. 99).

To make: The work advances from right to left, start by taking a stitch from left to right through upper thickness of material on

line for seam; then, as work advances, from right to left, by making small, even stitches, the end of thread is securely held.

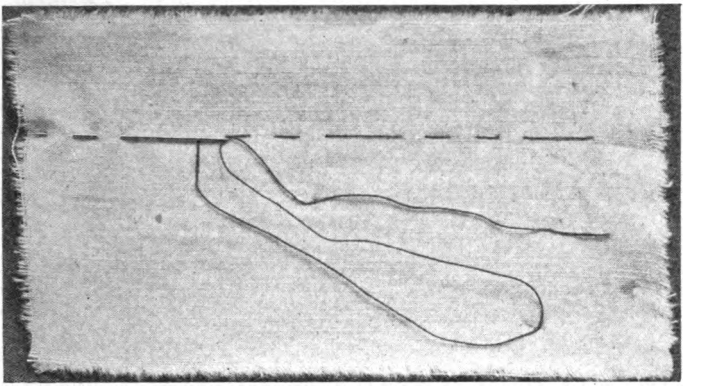

FIG. 97.—Dressmaker basting.

To fasten: Push the needle through to the under side of the cloth, take two stitches, one on top of the other, through one thickness only; bring the needle through the last stitch to knot it.

Tucking: Running Stitch.—To make: Small even stitch, being

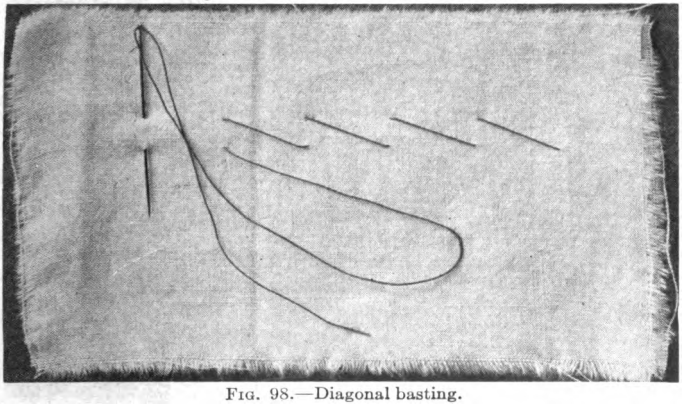

FIG. 98.—Diagonal basting.

careful not to draw the thread tight. Sew on line of pin-pricks or crease. Uneven stitch is used in tucking chiffon or similar materials, the longer stitch on the wrong side (Fig. 100).

Gathering.—Even or uneven variety of running stitch; even when pulled, uneven when stroked.

Use: For setting a piece of cloth into a shorter space, as an apron, petticoat, or drawers into a band, or ruffles into spaces planned for them.

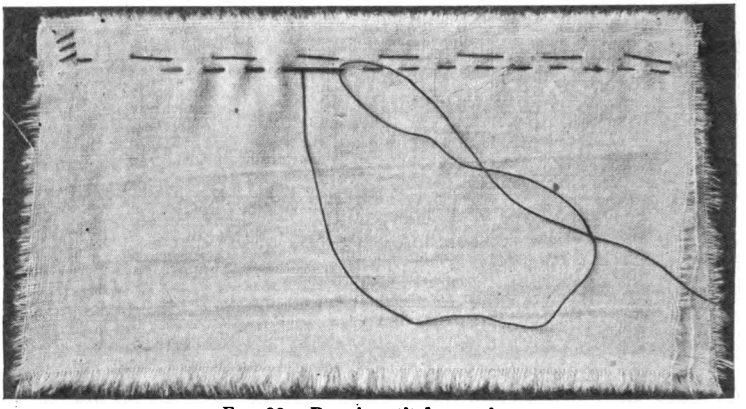

FIG. 99.—Running stitch, seaming.

To work: Divide both the part to be gathered and that to which it is to be applied, into equal parts, eighths, quarters or halves, and mark with thread, either a few small running stitches or a cross-

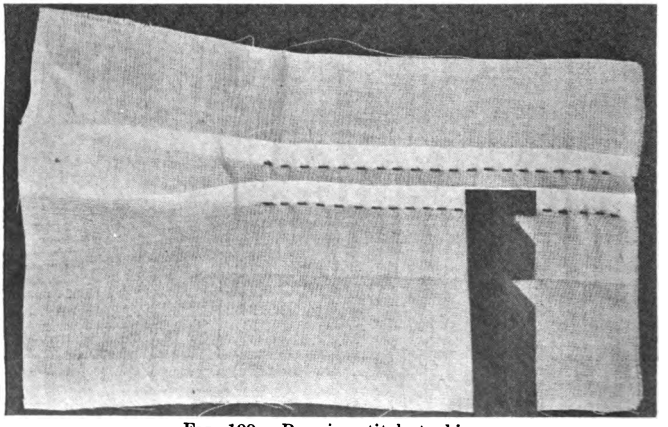

FIG. 100.—Running stitch, tucking.

stitch. The gathering thread should be a few inches longer than the space to be covered. Use either single or double cotton, number suitable to your material. Use a knot, and begin from one-quarter

to three-eighth inch from the edge of material, taking a small back-stitch to prevent possibility of the knot drawing through the cloth. When gathering, do not remove the needle from the cloth until the end of the space to be gathered has been reached. If the needle becomes crowded, push the cloth off at the eye of the needle, but do not remove the needle. The gathers should then be stroked or pulled (Fig. 101).

Stroking.—Draw the thread up so that the gathers are very close together, and wind the thread upon a pin which has been put

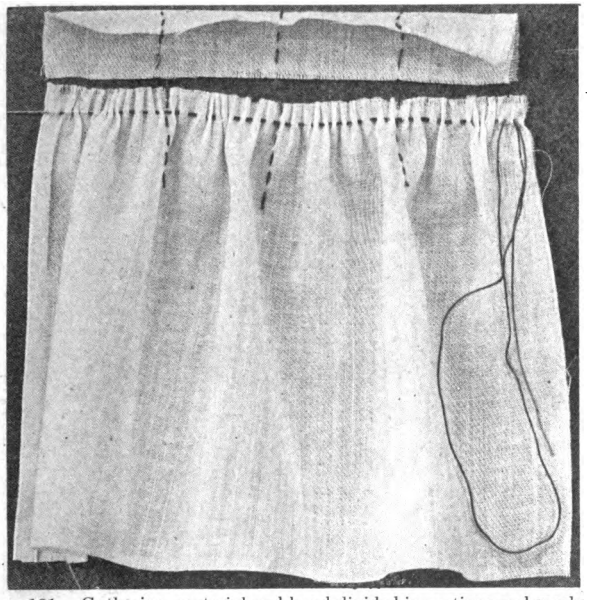

FIG. 101.—Gathering, material and band divided in sections and marked.

into the cloth. Then holding the gathers between the thumb and first finger of the left hand, with the point of a blunt needle or the eye of a coarse needle, stroke down beside the fold of each gather and press it close against the next, and so on until all is completed. This makes the gathers separate and lie smoothly when ironed.

Pulling Gathers.—Place pin in skirt at knee; wind one end of gathering thread securely around pin; then holding gathered piece taut between thumb and first finger of left hand, the cushion of the finger just below and parallel to the gathering thread on the under

side, and thumb on gathering thread on upper side, pull the gathers with the right hand down over cushion and against thumb.

Gathers are made with (1) double thread, one row, or (2) single thread, two rows.

Plain gathers, for setting material into bands and ruffles under tucks or folds (Fig. 101).

Gauging.—Used when there is a very great amount of fulness to be drawn into a smaller space. A large stitch is taken on right side

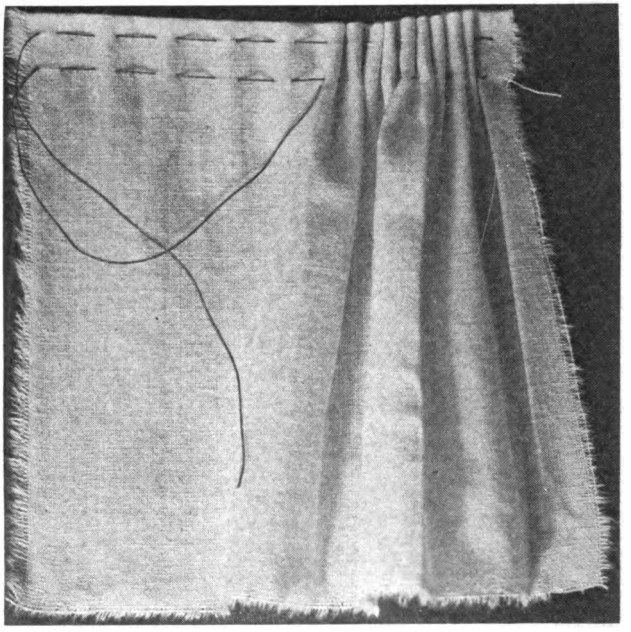

FIG. 102.—Gauging.

of the cloth, a small one on under. Each stitch of succeeding rows must lie directly under the one above (Fig. 102).

Shirring.—Several rows of gathers, at various distances apart, drawn up, for the purpose of ornamentation, yoke effect in skirts and waists, etc. Stitches do not have to lie one directly under the other (Fig. 103).

Stitching.—Form: On the right side of cloth, a succession of short stitches, the end of one stitch meeting the other; on the wrong side, a succession of stitches overlapping each other.

Use: Where there is need of strength, in seam, bands, and tapes; also for decoration.

To work: Baste seam carefully; begin stitching with a few small running stitches, starting one-half inch from the end of the cloth, and sewing from left to right until one-eighth inch from the end; turn work and take one stitch back to the end of the cloth, pass needle under twice that space on the wrong side, coming

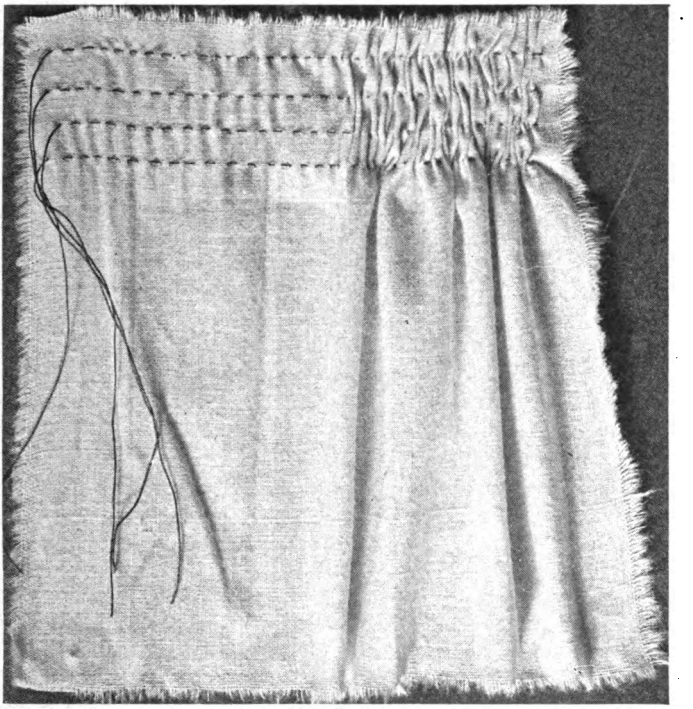

FIG. 103.—Shirring.

through to the right side, and back to the end of the first stitch formed, then through to the wrong side and forward twice the length of the upper stitch; cover running stitches with stitching; repeat (Fig. 104).

To join thread: When last stitch is made, as needle passes to wrong side of cloth, take two stitches directly over last stitch, but only through one thickness of cloth, then draw the needle through

the last stitch to make loop knot for fastening. Begin with new thread as at first, making stitch appear unbroken on the upper side.

To fasten: Same as in joining thread.

Backstitching.—Form: Stitches do not meet on right side; there is a space between, like running stitch.

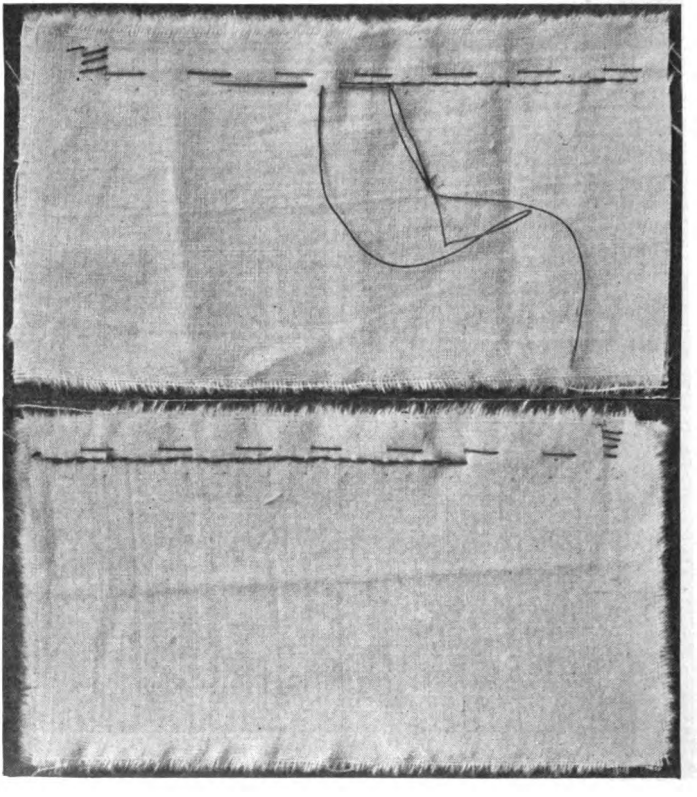

FIG. 104.—Stitching, right and wrong sides.

Use: When there is not as great need of strength as in stitching.

To make: Same as in stitching, passing needle under three times as much cloth on the wrong side, and coming back half way to the end of the last stitch on the right side (Fig. 105).

To join and fasten: Same as in stitching.

Combination Stitch.—Form: Right side, three stitches meeting, space, three others meeting, space; repeated.

Use: Where not a great deal of strength is required, fells, French seams, etc.

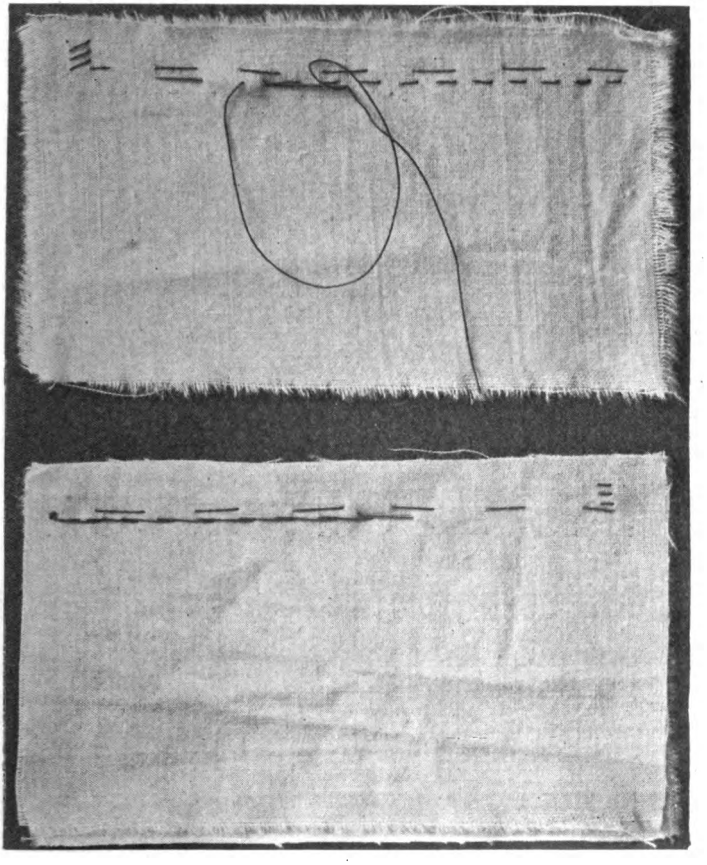

FIG. 105.—Back stitching, right and wrong sides.

To make: Begin same as stitching and backstitching; take two running stitches, let needle come to right side of cloth, as if to take another, but pass the needle back to the last running stitch, and through to wrong side of the cloth, passing under the last stitch on

the wrong side and up through the same hole through which the thread passed last. Take two running stitches and repeat (Fig. 106).

Overhanding.—Form: Slanting stitch on the wrong side, straight stitch on the right side.

Use: To make flat, strong, but almost invisible seams in under-

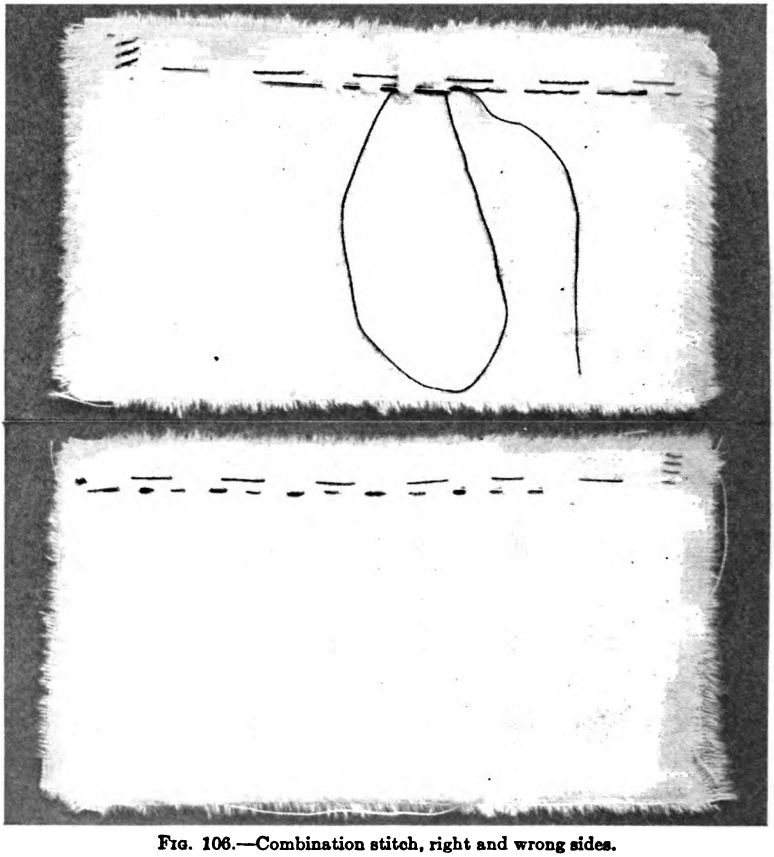

FIG. 106.—Combination stitch, right and wrong sides.

clothing and bed linen, hemming table linens and sewing on lace, and patching. It is sometimes done on the right side, when finishing the ends of hems or bands, or pillow cases.

To make: Crease a fold in raw edges. Baste, having folded edges together, or two selvedges together. Hold cloth between the first

finger and thumb, against the cushion of the first finger; hold in place with thumb and second finger. Draw needle through the edge of the upper thickness of the cloth, leave a short end of thread; then put needle through two thicknesses of cloth, and sew over the end of thread, pointing the needle toward the chest. This gives the proper direction to the stitch. Take stitches that are not deep; do not draw them tight, nor crowd them (Fig. 107).

To join: Let the end of the old thread come out through the under thickness of cloth. Draw the new through the upper thickness. Let short ends extend, over which the overhanding can be done.

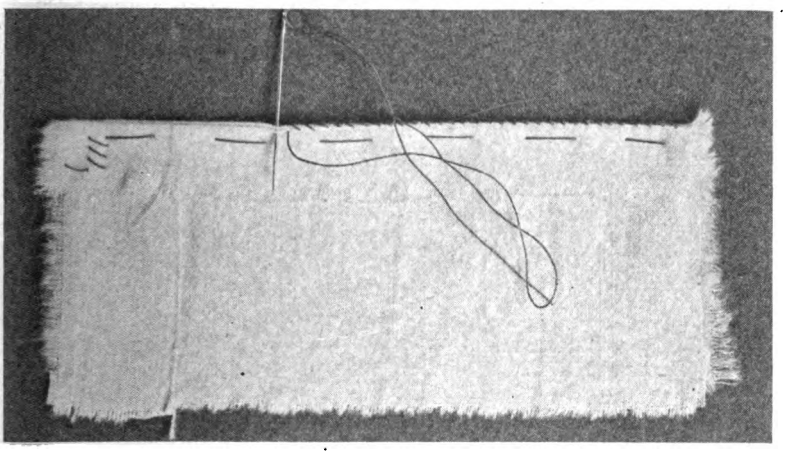

FIG. 107.—Overhanding.

To fasten: Turn the work and overhand over the last few stitches taken.

Overcasting.—Form: Loose, diagonal stitch taken over the raw edges of cloth to keep them from ravelling.

To make: First trim the edges evenly. Use a knot, but in double seams, conceal it between the edges; in a single seam which will be pressed open, it can be hidden on the under side of the seam. Hold the cloth over the first finger of the left hand, using the second finger to draw the material through and the thumb to hold it in position. Point the needle toward the left shoulder, bringing it through from under to upper side, and working from right to left. The stitches should be regular in size, not drawn tight, and are usually twice as

far apart as they are deep. In turning corners, take two stitches through same hole to form a V. If gored seams are being overcast, begin at the bottom so as not to work against the ends of threads at the edges (Fig. 108).

To fasten: Two small stitches on under side and second stitch knotted.

To join: Fasten and begin as at first.

Hemming.—A hem is a finish for the edges of garments, etc., secured by making two folds at the edge, narrow or wide as need may be. The first turn for a narrow hem, may be one-eighth inch

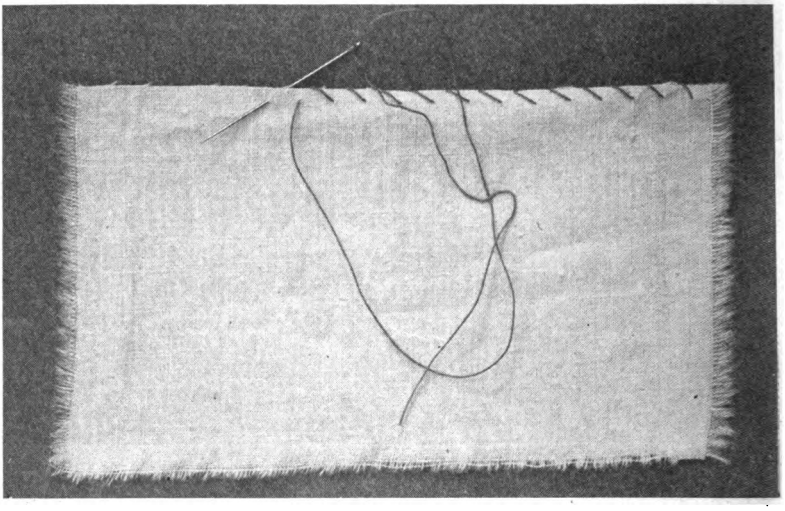

FIG. 108.—Overcasting.

or less; for wider hems, usually one-quarter inch, rarely more. The width of narrow hems in turning, may be gauged by the eye, but wider hems must be measured, pricked in, on undergarments, turned on the pricks and creased. Hems on outergarments may be measured and creased at end of marker, or marked with pins or tailor's chalk. In measuring, use a marker made of cardboard, with carefully measured spaces. Flannel necessitates the basting of the first turn, as otherwise it will not hold (Fig. 109).

Plain Stitch.—Form: A slanting stitch through the cloth and fold. Stitch slants on right side also.

Use: To hold folded edges in place, as hems, facings, fells, lace, etc.

To make: Conceal end of thread under a fold by passing needle

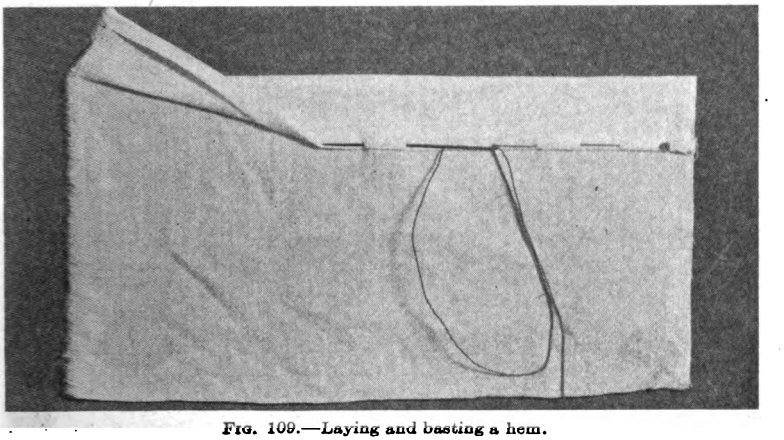

FIG. 109.—Laying and basting a hem.

through fold from left to right, then turn needle and passing to left, take up some threads of the cloth and of the fold; repeat. Hold work over first finger of left hand and keep end of work out of the

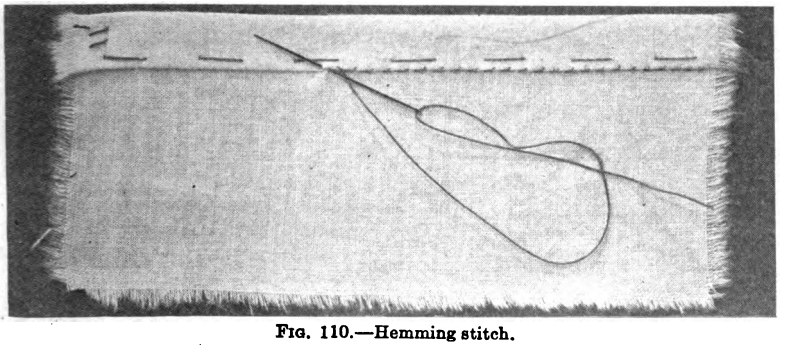

FIG. 110.—Hemming stitch.

way with the second finger. Each stitch slants on both right and wrong sides (Fig. 110).

To join thread: Take stitch in cloth with old thread and stitch in fold with a new thread, tuck ends of the thread under fold, and sew over them.

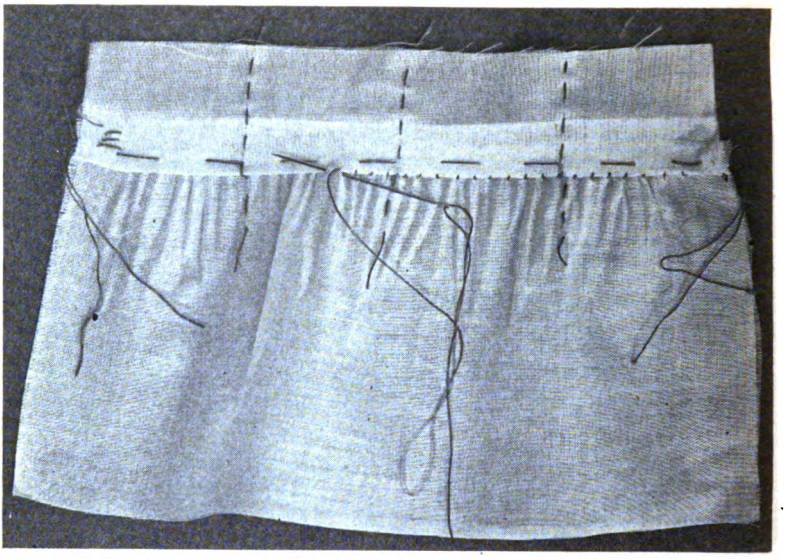

FIG. 111.—Vertical hemming.

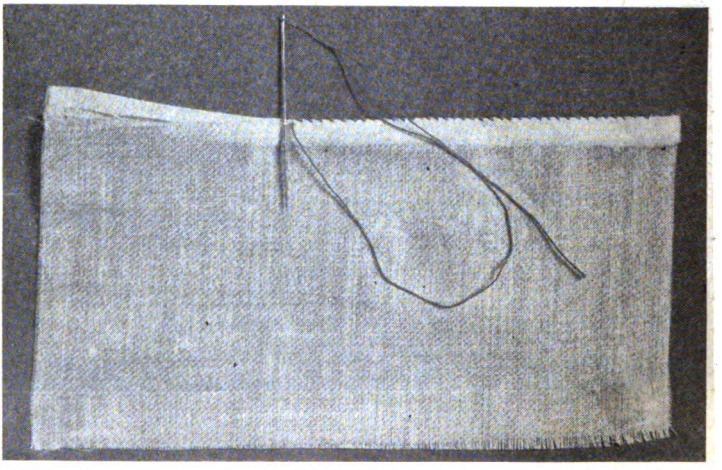

FIG. 112.—French hem.

To fasten: Take a few small running stitches in fold, and out through hole of hemming stitch.

Vertical.—For sewing gathers to band.

To make: Start as in plain hemming; then take a slanting stitch through gathers into band; carry the needle straight down and repeat, so making straight stitches on upper side (Fig. 111).

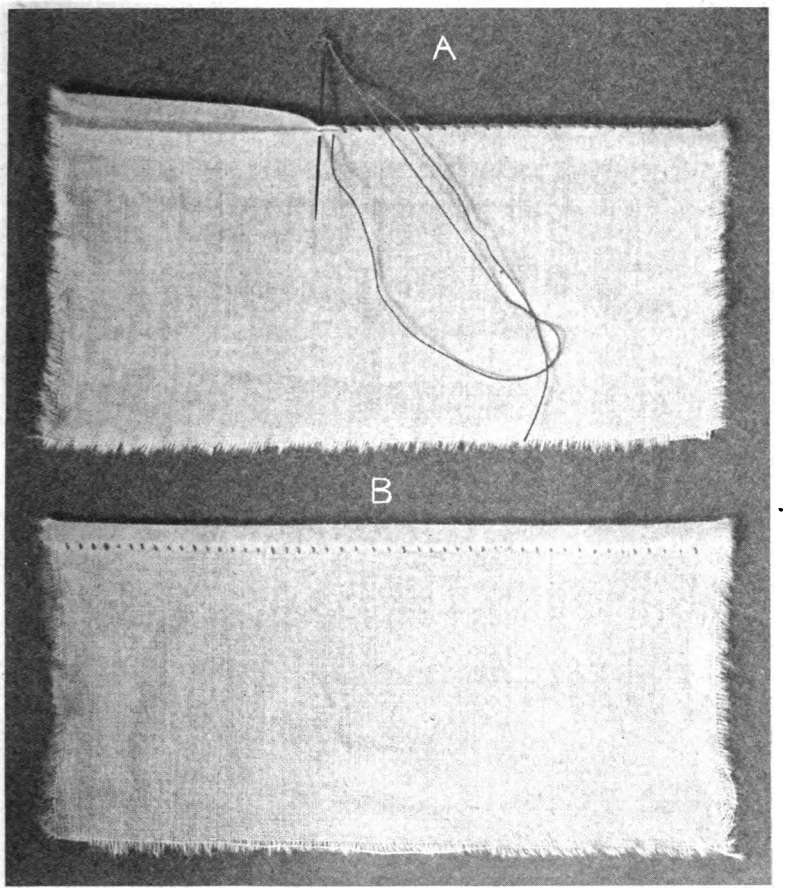

FIG. 113.—Napery or damask hem; *A*, wrong side, hem turned and overhanded; *B*, right side, finished hem.

To join and fasten: Same as plain hem.

French Hem.—Turn a very narrow hem toward right side of garment, then fold *hem* back to wrong side, and crease. Where the fold of the hem meets the *fold* of the cloth, sew with overhanding

stitch. When sewed, hem remains on wrong side of garment (Fig. 112). Used on neck of corset covers, etc.

Napery or Damask Hem.—Turn narrow hem to wrong side of

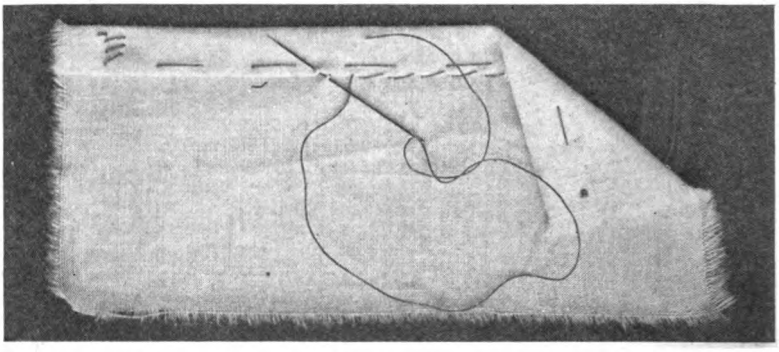

FIG. 114.—Blind hemming.

damask, fold back to right side and crease. Then overhand the two folds, when completed, open hem out and press flat (Fig. 113).

Blind Hem.—Used for sewing hems of silk, wool, or cloth when invisible sewing is desired.

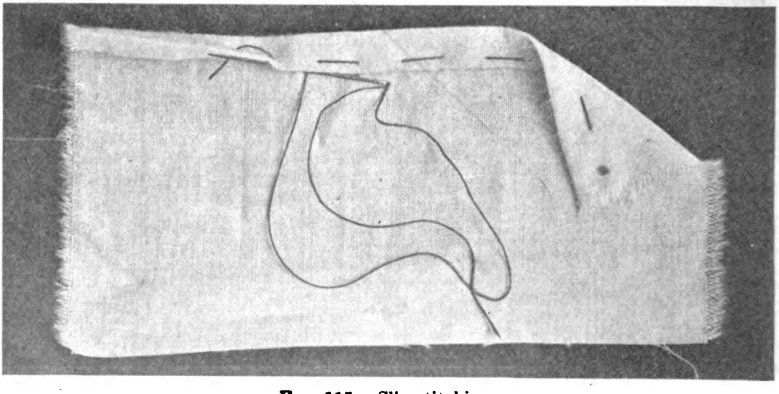

FIG. 115.—Slip-stitching.

To work: Instead of taking stitch through cloth to right side, take up enough of the thread to hold, but not through to other side, and then through fold of hem. Take a longer slanting stitch between hemming stitches than in plain hemming (Fig. 114).

Slip-stitch.—Used where an entirely invisible sewing is desired for fastening hems, folds, facings, etc.

To make: Use a small knot, take up very small stitch on under side of fold of hem, and only part of the thread in the cloth. Looks like a running stitch, if edge of hem is turned back. Not a strong sewing, but desirable for exquisitely fine finishing (Fig. 115).

Whipping.—Use of plain hemming or overcasting stitch in joining lace to a rolled or finished edge, or as a means of gathering a rolled edge.

To work: Hold strip for ruffle with the wrong side toward the worker, turn edge and roll between thumb and first finger of left hand, rolling only about an inch or two at a time. Stitches pass

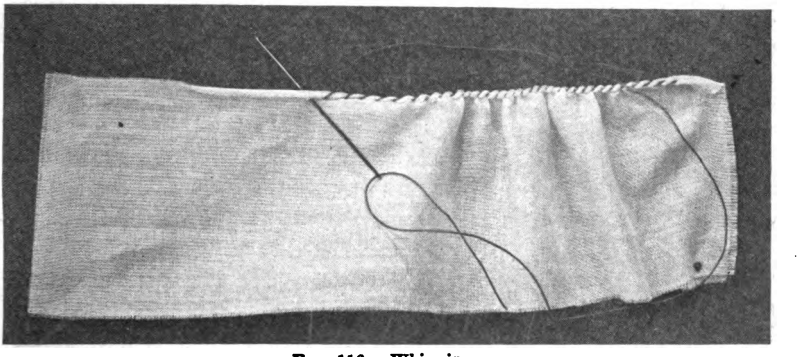

FIG. 116.—Whipping.

under roll, not through. Use short threads. Ruffles which are whipped are afterward overhanded to the garment. Each stitch should take up one fold or gather made in the whipping (Fig. 116).

Feather, chain, catch, cross, blanket-stitch, see under "Embroidery."

Buttonholes (Fig. 117).—The following points must be considered when making buttonholes: (1) marking; (2) size; (3) cutting: (*a*) with buttonhole scissors; (*b*) with ordinary scissors; (4) working: (*a*) overcasting; (*b*) buttonhole stitch; (*c*) fan; (*d*) bar.

1. The position of the buttonholes should be marked on the garment with a pin or basting, giving due regard to the spacing between the buttonholes and the distance of each from the edge of hem or band.

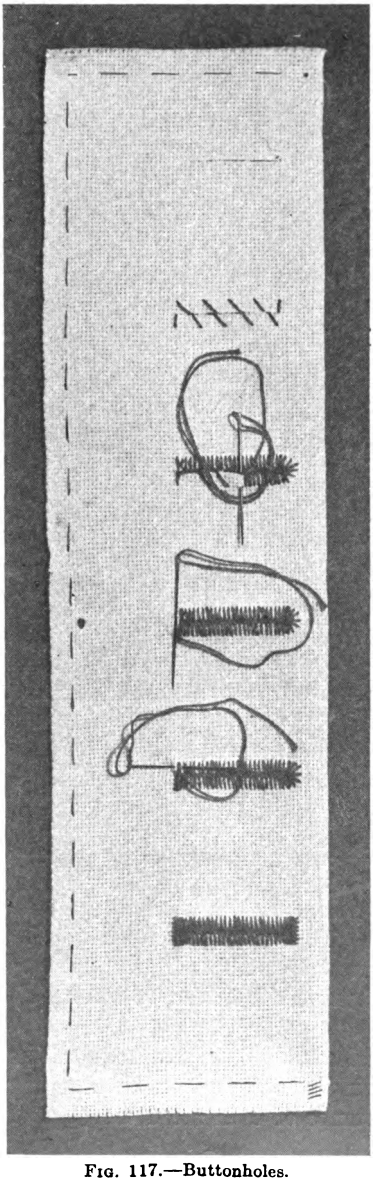

FIG. 117.—Buttonholes.

2. The size should be about one-sixteenth inch more than the diameter of the button which is to pass through the hole.

3. The buttonhole must be cut exactly along the thread of the material, otherwise the edge will be uneven and hard to work and the finished buttonhole unsightly; (*a*) if the holes are to be cut at right angles to the edge of garment, buttonhole scissors may be used; (*b*) if these are not available, the extreme ends of buttonhole may be marked with a large pinhole, and the buttonhole cut by inserting the sharp point of a small pair of scissors in one pinhole and cutting toward the other one. If the buttonholes are cut parallel to the edge of the garment, as in the box-plait on the front of a shirtwaist, the second method of cutting must be used.

4. Working: Buttonholes must be worked from right to left. (*a*) Overcasting: Since buttonholes are always cut through two or more thicknesses of material, they must first be overcasted in order to hold the edges evenly together and to prevent their fraying while being worked. To work: Hold the slit diagonally across the cushion of the first finger of left hand; at the inside right hand end of the buttonhole, insert the needle between the two layers of cloth and bring it out

exactly below the end of the slit; the distance from the edge will be governed by the size of the buttonhole and the kind of material. From three to five overcasting stitches should be made on each side of the buttonhole, according to its length. (*b*) Buttonhole stitch. The last overcasting stitch (Fig. 117) will be exactly opposite to the first one; now bring the needle through immediately below the first overcasting stitch, which should bring the thread into position for the first buttonhole stitch at the inner end of the slit (if the latter is cut at right angles to the edge of garment); pass the needle through the slit and bring it up through the cloth exactly beside the last stitch; while the needle is still in the cloth, pass the double strand of thread from the eye of the needle around the point of the needle, from right to left, then pull the needle through the cloth and straight up from the edge of the slit (not at an angle) in order to place the stitch properly with the purl or twist right on the raw edge of cloth, being careful not to pull cloth too tight, which would pucker cloth and make the edge of buttonhole uneven. Repeat the buttonhole stitch until the first side has been worked. (*c*) The outer end of buttonhole may be finished as a fan by continuing the buttonhole stitches around the end (usually five or seven to complete the turn), letting the purl of each stitch lie very close to the preceding one in the end of the slit, and the other ends of the stitches radiate from the end of the buttonhole like the stick of a folding fan, the center stitch should extend straight out from the end of slit. Now the buttonhole stitch may be continued along the second side of buttonhole toward the inner end, which is to be finished with a bar. (*d*) When the last buttonhole stitch has been made, bring the needle through as if for another buttonhole stitch, but do not pass the thread around the point of the needle, pull it through and put the needle down in the hole made by the first buttonhole stitch on the opposite side of slit, thus laying a straight stitch across the end of the slit; make two or three stitches the same way, exactly on top of each other, then turn the buttonhole around so it lies straight across the cushion of first finger and work tiny blanket stitches (Fig. 117) over the long stitches just made; so that the twist or purl of the blanket stitch is toward the buttonhole, catch each stitch in the cloth behind the bar, and work them close enough together to completely cover the bar; fasten the thread by running it back under the stitches on the wrong side of the work. The buttonholes (unless very long) may be worked with one thread throughout, but should it be neces-

sary to piece the thread, run the old thread back under the stitches on the wrong side; then run the new thread forward under the same stitches and bring the needle up through the purl of the last buttonhole stitch, so as to keep the finished edge of the buttonhole unbroken.

Buttons.—To sew on a garment, conceal the knot of the thread (which should be double) under the button. Place a pin on top of the button, and sew back and forth across this in order to keep the thread loose enough beneath the button to wind the end of thread around when the sewing is complete; this forms a neck around which to draw the buttonhole. Fasten thread by taking two stitches on top of each other; complete with a buttonhole stitch.

Hooks and Eyes.—Sew all around the small circular ends of both hooks and eyes, tack across the ends of the hooks to keep them in place; also across the eyes at sides to hold them firmly. When a very neat finish is desired the hooks and eyes may be sewed on with a buttonhole stitch.

Snap fasteners are sewed with several over-and-over stitches, taken in each hole on the edge of the fastener.

Tapes are turned in on one end, hemmed to the garment, and one-quarter inch from the turned edge, finished with a row of stitching. The loose end is hemmed or finished with blanket stitch.

SUGGESTIVE QUESTIONS

1. What is the form of a running stitch and for what is it used?
2. Name and describe the varieties of basting.
3. Describe the process of gathering.
4. What is the difference between gauging and shirring?
5. For what is stitching used? Describe the method of making.
6. Wherein do overhanding and overcasting differ? What is the use of each?
7. Name and describe the varieties of hemming and the process of making the stitch.
8. Name and describe the processes in buttonhole making.

CHAPTER XII

CONSTRUCTIVE PROCESSES: CUTTING, BASTING, SEAMS, FINISHES

1. **Preparation of the Material.**—The ends of the cloth must be straightened before placing patterns for cutting. To do this, clip through one selvedge, then with the left thumb on top of the cloth, the right thumb underneath, tear quickly, to the opposite selvedge, which should be cut, else there is danger of tearing the cloth down along the selvedge. By holding the thumbs as mentioned above, the cloth will not twist as badly as it does when no special attention is paid to the method of handling it. When using nainsook or other materials which do not tear easily, draw a thread of the material and cut on the line thus made. In cross-barred material, use a bar or a guide. When the cloth has been torn or cut, lay the cut ends together, selvedges meeting. If the ends seem twisted, pull the cloth diagonally across the ends to draw the threads in line. Repeat until the ends lie together perfectly straight.

2. **Placing Patterns on Material.**—The cloth should be folded in the way which will admit of the most economical cutting. For some garments, according to the width of the material and the size of the pattern, it may be better to fold it through the center lengthwise, while for others, folding the two cut ends together will permit the most satisfactory cutting. Lay all pieces of the pattern on the cloth, with regard to the directions, as to the grain of the material and the seam allowance; do not pin until satisfied that a correct and economic placing has been followed. Then pin the pattern to the cloth, using few pins, and placing them where they will not interfere with the use of the tracing wheel. Weights or small bags of shot are sometimes used to keep patterns in place while cutting.

3. **Cutting.**—If seams are allowed on the pattern, cut through both thicknesses of cloth, close to the edges of the pattern; if seams have not been allowed, use a tape measure, holding the division of the measure indicating the width of seam desired at the edge of the pattern, and cut through both thicknesses of the cloth, along the end of the measure which should be moved ahead of the shears. Cut clean, sharp edges on the cloth.

4. **Marking Seams.**—Before removing the pattern from the cloth trace all seams with a tracing wheel, through the perforations for such, on a commercial pattern, or along the edges of a drafted pattern. Trace also the following:

Corset cover, chemise, night-gown	1. Waist 2. Neck 3. Armhole 4. Hem	lines
Skirts	1. Waist 2. Hip 3. Hem	lines
Drawers	Waist lines	

If the material is very fine and thin, trace lightly, so as not to weaken the threads of the cloth.

Basting for Fitting.—(1) Corset covers, chemises, night-gowns: Pin the seams together, beginning at the waist line, which should be marked with a colored thread to be removed before stitching the garment, lest a bit remain in the seams and stain the garment when laundered; keep traced lines together, placing pins at right angles to the seams. Baste garment to be fitted with small stitches, so it will not stretch in the fitting and become too tight after stitching. This applies more especially to corset covers and underbodices than to such garments as chemises and night-gowns. Place a row of running stitches one-quarter inch below the edge of the neck of corset covers, underbodices, chemises and night-gowns before fitting; draw thread a little tighter than the edge of the garment; this prevents stretching of the material.

(2) Petticoats are usually cut with gores, which will bring a bias and a straight edge, or two bias edges, together. Lay the straight edge of a gore down on the table; place a bias edge on top, so as to keep the bias from stretching; if two bias edges are being put together, lay the less bias on the table, with the more bias on top; pin seams (pins at right angles to tracing), keeping traced lines together, and having waist, hip and hem lines meet. Sew with small stitches twelve inches below the waist line, so as to hold seams firm while fitting; longer stitches may be used on the other parts of the seams.

(3) Drawers: (*a*) Open drawers; baste lower seam of the leg, and darts, if any, beginning at the point of the dart, and keeping the tracing together. (*b*) Closed drawers; baste the lower seam of

the leg first, then take the two parts, place the leg seams together, pin from this point to waist on each side, and baste with small stitches. Baste darts (if any) the same as for open drawers.

Fitting will be discussed in connection with each problem.

II. MAKING

1. **Seams.**—A seam is a line of sewing joining two or more pieces of cloth, to hold them together. Seams are of various kinds. Those which are generally used in making undergarments are: (*a*) Plain seam, (*b*) French seam, (*c*) fell.

(*a*) *Plain Seam.*—Appearance: Two raw edges, with row of

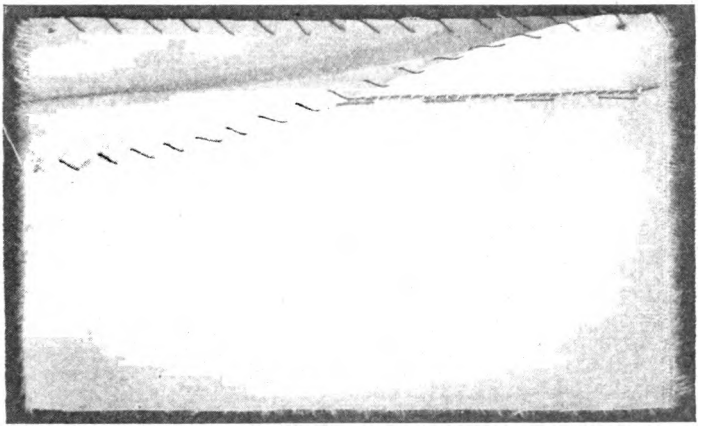

FIG. 118.—Plain seam.

stitching or machine stitching, three-eighth to one-half inch from edges, which are afterward neatly trimmed and overcast (for undergarments).

Use: Petticoats, dress skirts and aprons.

To make: Place two right sides of cloth with seam lines together (if traced), otherwise the two edges of cloth; pin, keeping traced lines together, pins at right angles to seams; baste through tracing, with small even basting for garment or petticoat. Sew with stitching or machine stitching beside the basting, not through it; clip and remove bastings, trim edges of seams evenly and overcast. Plain seams are sometimes pressed open before overcasting (Fig. 118).

(*b*) *French Seam.*—Appearance, double thickness, smooth finish. One stitching visible.

Use: Corset covers, underbodices, night-gowns, petticoats, lingerie dresses.

To make: Place the wrong sides of cloth together, match the

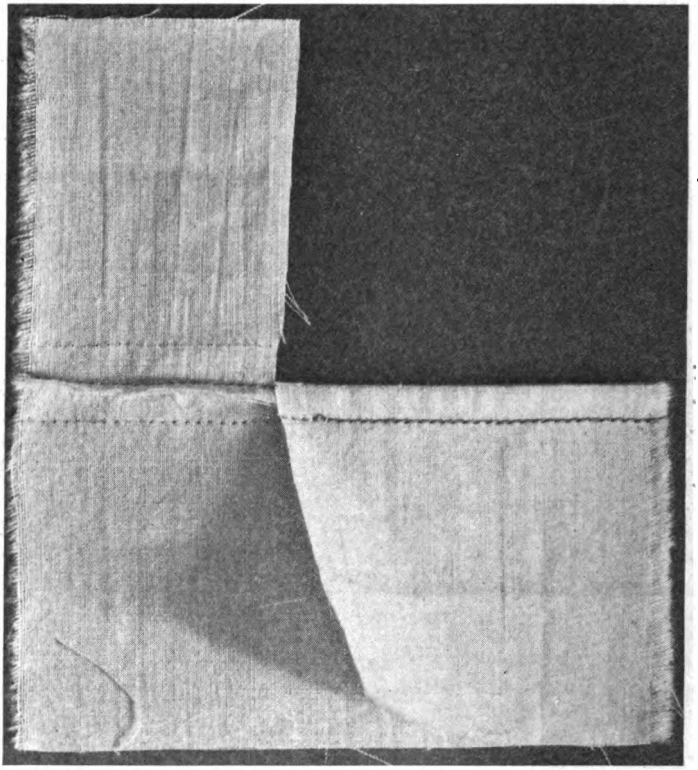

Fig. 119.—French seam.

tracings, if used; if not, the two edges of cloth; seam on right side of cloth. Pin tracings together as in plain seam and baste. Stitch the seam one-eighth inch outside seam tracing; trim to one-eighth inch or less. Crease seam flat, then turn so that two right sides are together, line of first seam directly on the edge; baste, and stitch so as to cover the raw edges of the first seam (Fig. 119).

(*c*) *Fell.*—Appearance, flat finish, one-quarter inch wide or less, showing two rows of machine stitching or one row of stitching and one of hemming or overhanding.

Use: Corset covers, underbodices, drawers, petticoats.

To make: Hemmed Fell.—Place two right sides of cloth together, having seam lines meet if traced; otherwise two edges together. Baste on tracing, stitch so that the upper side of the stitch comes to the right side of the seam. Trim the under side of the seam to

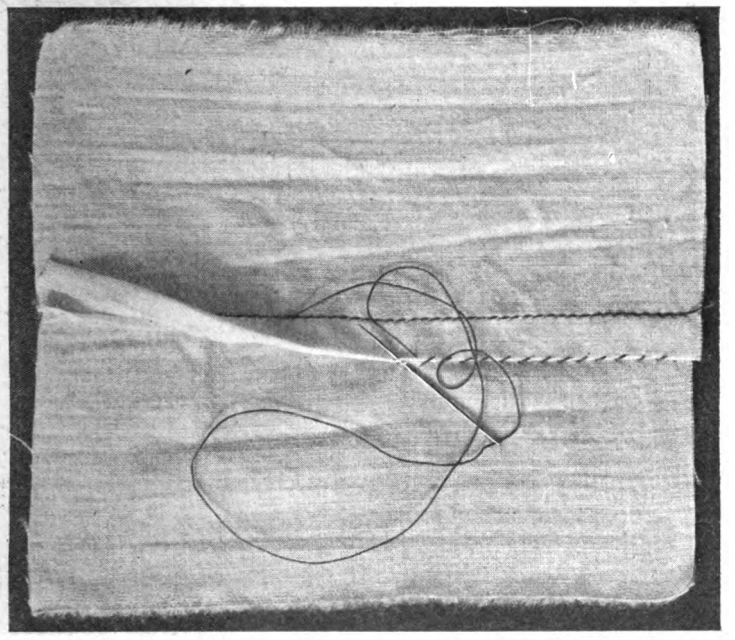

FIG. 120.—Hemmed fell.

one-eighth inch, then turn the wide edge over the narrow one; lay both flat on the cloth. Hem the edge of fold to the cloth (Fig. 120).

Stitched Fell.—Same as other except that both seam and fold are stitched by machine. Finish stitched fells on right side, therefore baste with wrong sides together (Fig. 121).

Overhanded or French Fell.—Same as hemmed fell, except the cloth is folded back on a line with the fold of the fell and overhanded as in French hem (Fig. 122).

Flannel Fell.—Place two right sides together; stitch seam three-eighth inch from edge. Trim under side and baste fell, not turning edge. Catch-stitch edge (Fig. 123).

2. **Finishes.**—*Hems.*—A hem is a finish made of the cloth itself or of an additional piece of cloth for the edge of garments or parts

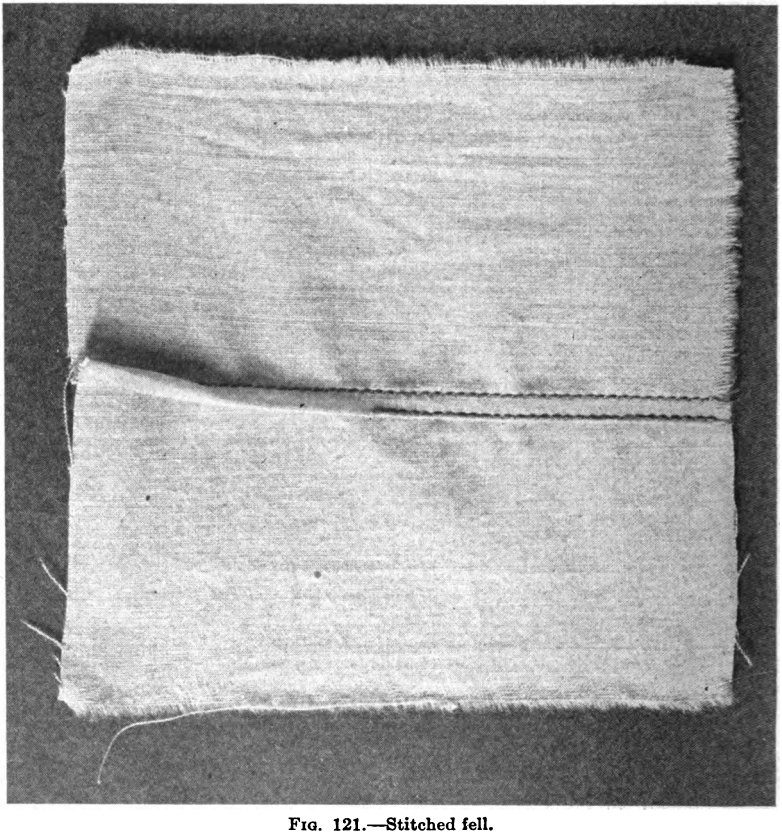

FIG. 121.—Stitched fell.

of garments. There are three kinds of hems which may be used; these vary in width.

(*a*) *Plain Hem.*—The edge to be hemmed must be trimmed evenly; then fold toward the wrong side one-eighth to one-quarter inch, depending on the width of the hem; crease the fold firmly

and fold again the required depth; use cardboard marker to measure the depth of the hem. Very narrow hems may be gauged by the eye.

Finish: The sort of garment and material will determine the kind of finish for the top of the hem. It may be finished by running, hemming (Fig. 110), machine stitching (Fig. 124), with hemstitching, fagoting, featherstitching, or chain-stitching (see chapter on

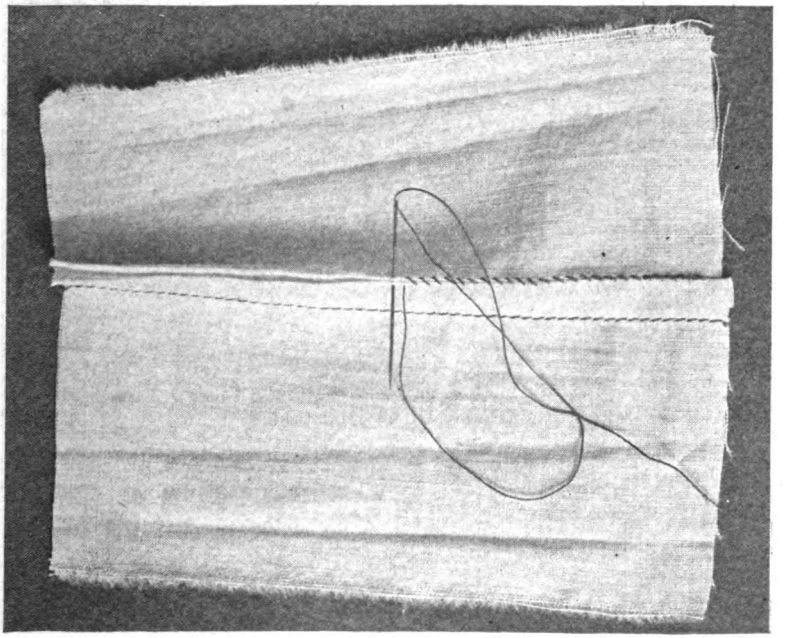

FIG. 122.—Overhanded or French fell.

Embroidery), the upper edge of the hem being shaped for this purpose (Fig. 125).

Faced Hem (or False Hem).—This device is used when garments have been outgrown in length or when there is a short quantity of cloth in the first making, and sometimes by way of decoration on the right side of a garment. The strips for this facing should be cut the correct depth and the same grain of the material as the garment itself; then joined except the final seam. If for a simple facing, the right side of the facing should then be placed

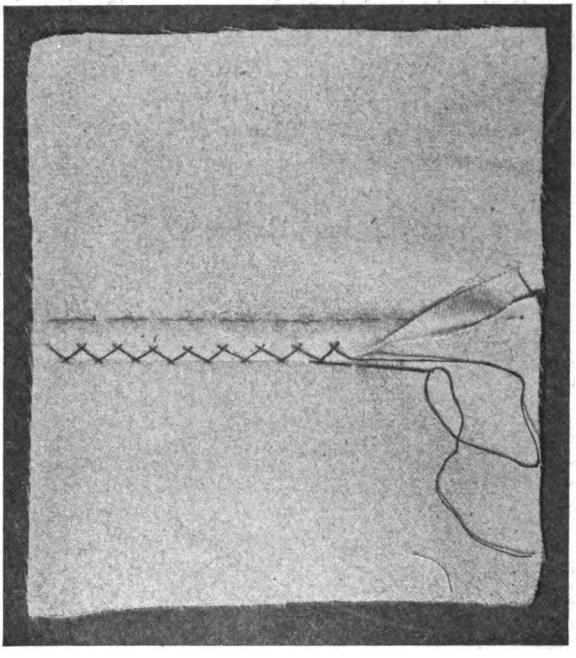

FIG. 123.—Flannel fell.

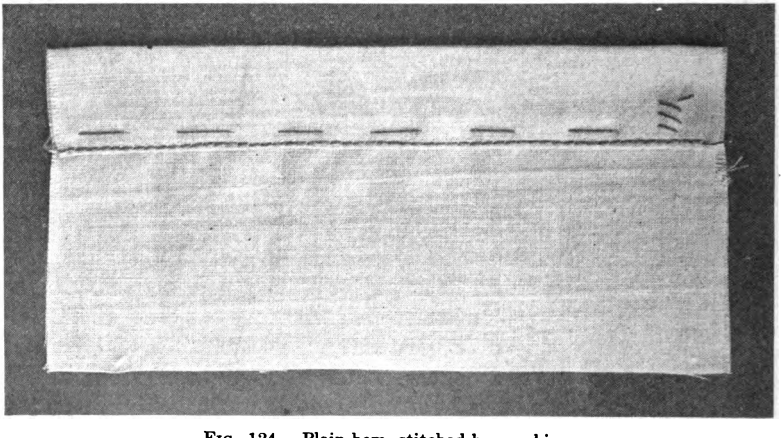

FIG. 124.—Plain hem, stitched by machine.

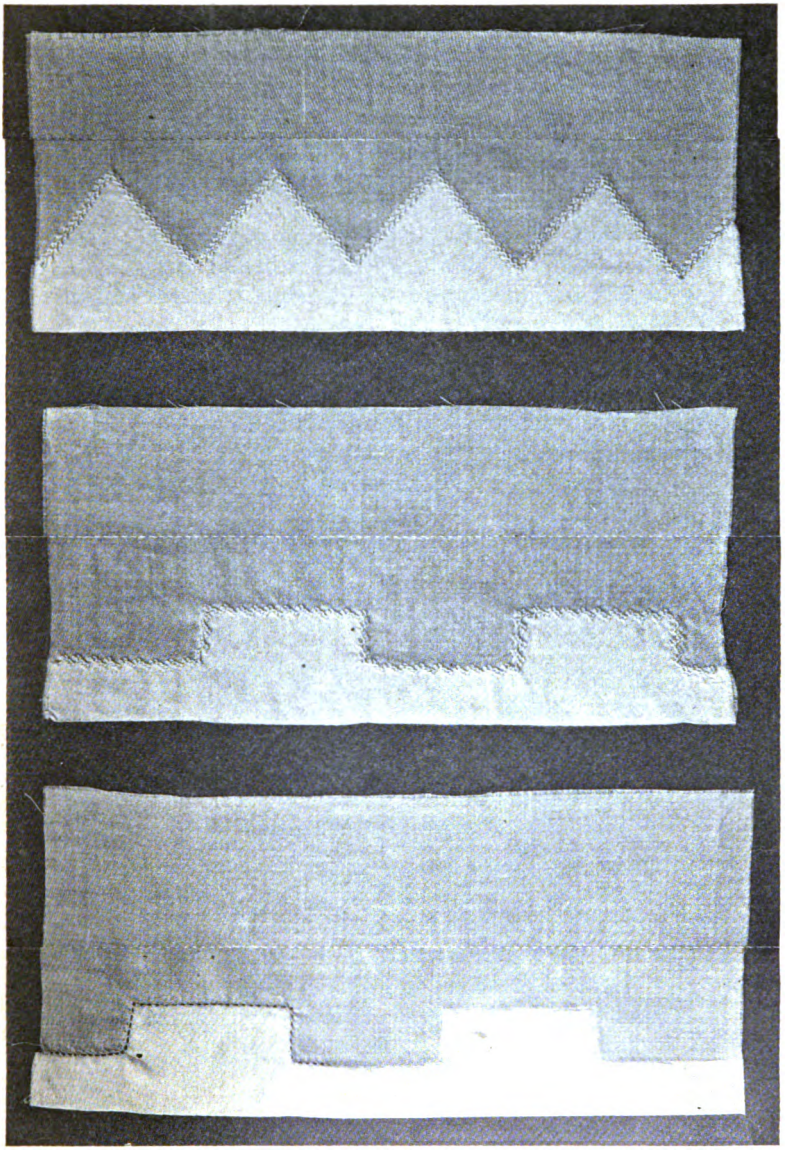

FIG. 125.—Shaped hems, with featherstitching and fagotting.

to the right side of the garment, basted to within one inch each side the point for the final join; make the join and baste remaining sections, stitch, then turn the facing to wrong side of garment and crease the seam so that a thread or two of the garment comes below the edge to prevent the facing from showing on the right side. Treat the upper edge of this hem in the same manner as a plain hem (Fig. 126).

Shaped Hems.—The lower edge of the garment is sometimes marked off in scallops or points, the facing basted to place and the stitching carried around the scallops, the edges trimmed and turned as in the plain facing (Fig. 127).

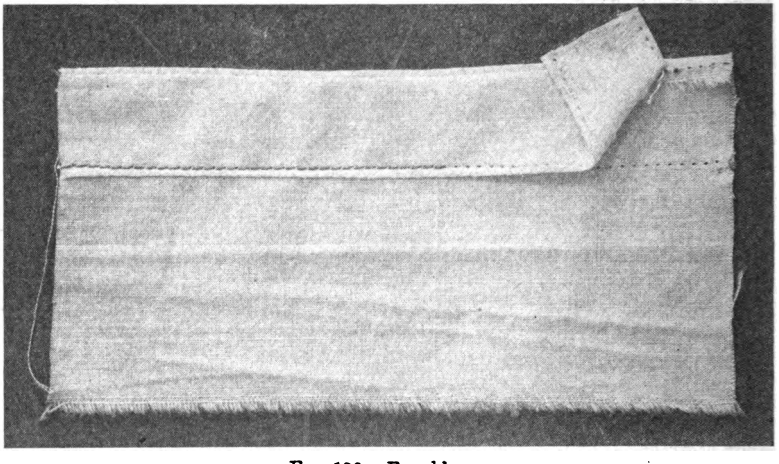

FIG. 126.—Faced hem.

Embroidery Edging as Facing.—Place the right side of the edging to the right side of the cloth, having the finished edge of the embroidery turned away from the edge of the garment, and the edge of the garment on the plain part or background of the edging, allowing sufficient of the latter to form a facing. Stitch one-eighth inch from the edge of the garment, then turn edging down into position, fold in the top of the facing and finish in any desired way (Fig. 128).

(*b*) *Scalloping* (*Embroidered*).—See chapter on Embroidery.

Banding.—A flat trimming used for plain petticoats. Cut enough bias strips of material (see Cutting, p. 391), twice the

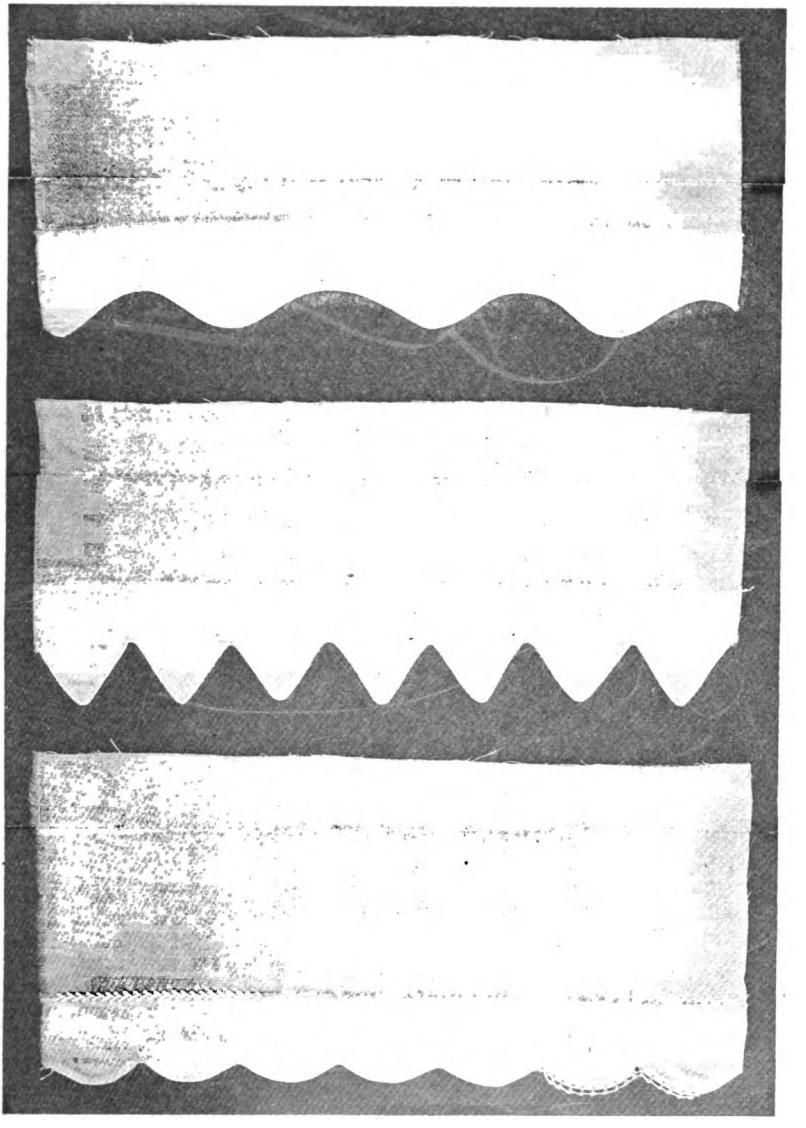

FIG. 127.—Facings with shaped edges, hemmed, stitched, or feather-stitched.

depth desired plus one-half inch, to go around the petticoat. These strips may vary in width, and be set as far apart as desired. Join the strips for each row of banding except the final join, which must

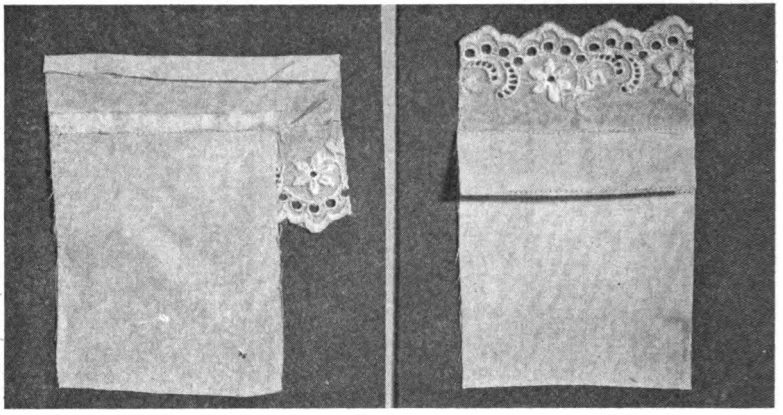

FIG. 128.—Embroidered edging used also as facing.

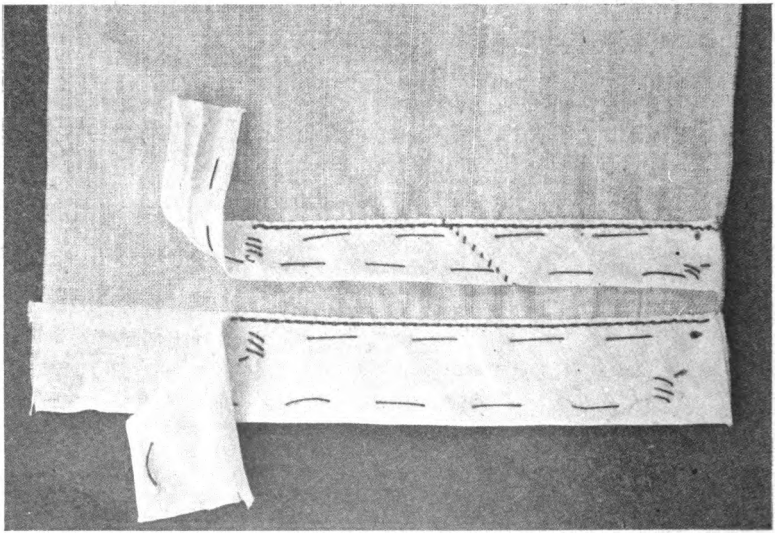

FIG. 129.—Banding, bias.

be very carefully made and must also be a bias join. Fold the strips through the center lengthwise; baste or press. Then turn the raw edges over one-quarter inch, baste or press and baste to garment. The join can be made when nearing the end of the basting. The lowest band may serve for the finish of the petticoat hem (Figs. 129 and 130).

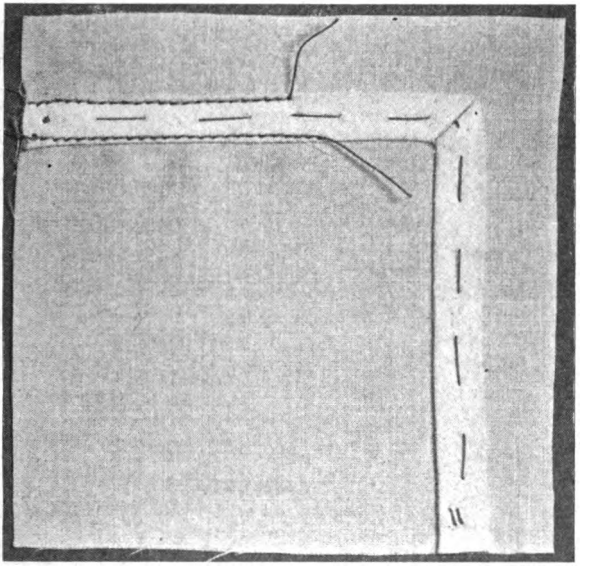

FIG. 130.—Banding, mitered corner.

(*c*) *Ruffles, Flounces.*—Ruffles are used for two purposes. Dust ruffles, narrow ones, not very full, are set into the bottom of the skirt to give more freedom in walking and save the wear on the outer flounce, which is usually of finer material. Narrow or deep ruffles are used for decoration, and to add fulness to the garment. They may be made of the material of the garment, of embroidered edging or lace (Figs. 131 and 132).

Straight Ruffle.—A ruffle consists of a sufficient number of strips of material joined together, to exceed the width of the space to be covered, and gathered or tucked at the upper edge to draw the extra fulness into place. The ruffle is used to give extra fulness at the lower edge of a garment (petticoat and drawers). The amount

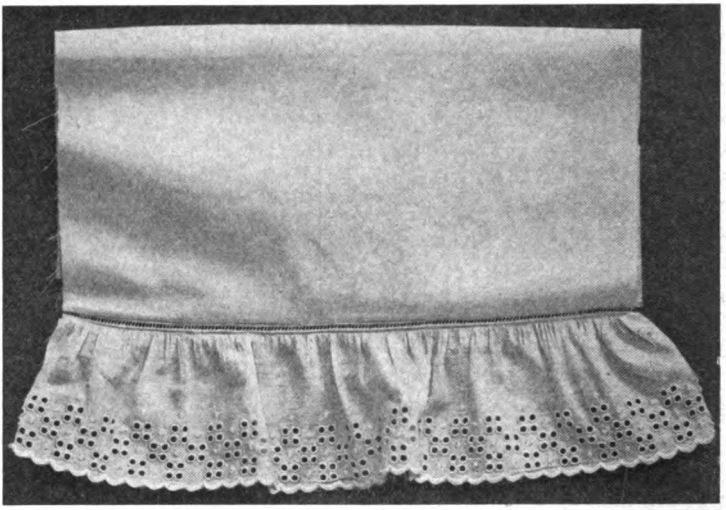

FIG. 131.—Ruffle of embroidered edging.

FIG. 132.—Flounce of net with material banding.

of fulness to be desired, one and one-third to one and one-half times the space to be covered, depends upon the fashion of the outer skirt.

To make: Decide upon the depth of the ruffle to be made, then cut as many strips the desired depth (measuring on the selvedge) as will give the necessary width at the bottom. Do not tear the selvedges from the widths just prepared, unless necessary.

To join: Overhand selvedges, if possible; French seams may be made on plain ruffles. When tucking is to be used around the ruffle, overhand edges if possible, or use plain seams or fells, as these will pass through the tucker more easily.

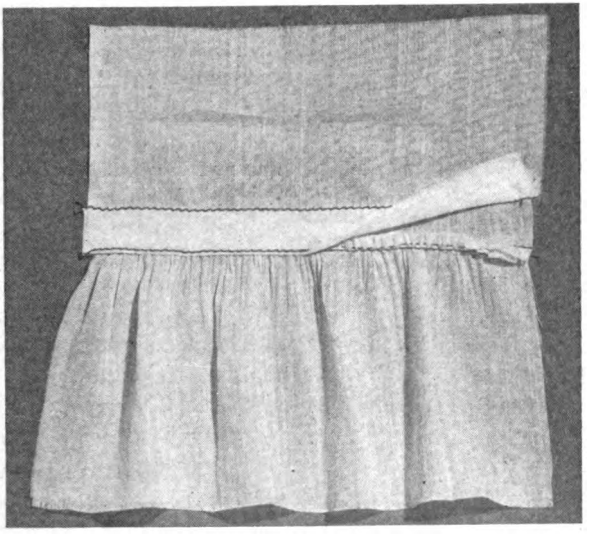

FIG. 133.—Dust ruffle.

Dust ruffles may be finished at the lower edge with a narrow hem; very narrow lace may be used on the edge applied by any of the various methods for finishing. The seams of the outer ruffle should be finished in one of the ways suggested above, and it may be decorated in keeping with the type of garment upon which it is to be placed. The fulness at the top of the ruffle may be adjusted with gathers or groups of narrow tucks (Fig. 133).

Bias Ruffles.—These are used on silk or sateen petticoats. Do not allow as much fulness for a bias ruffle as for a straight one;

one and one-quarter to one and one-third times the space is sufficient. The bias material itself gives more fulness. Do not cut the selvedge from silk or sateen unless it draws. Cut the bias strips (Bias Cutting, p. 391) as deep as necessary; join in the correct way; stitch hem, being careful in turning the hem to see that the bias is not twisted. Stitch hem and gather ruffles at the top by hand or machine.

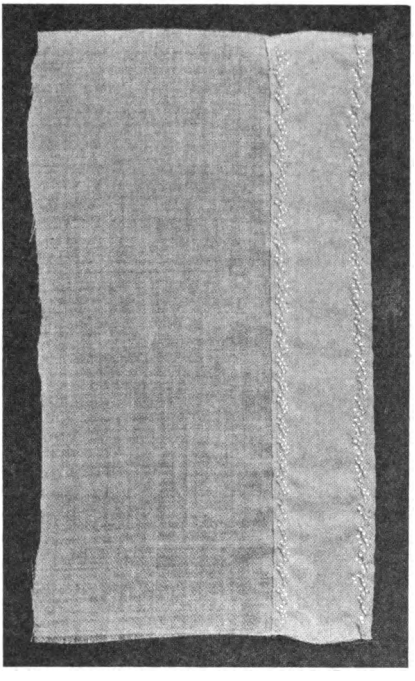

Fig. 134.—Box plait for corset cover, edges featherstitched.

Circular Flounce. — These may be cut in one piece, and the decoration placed on the edge and through the flounce, or the flounce may be cut into sections and these joined with entre-deux or lace insertion, and then the flounce trimmed in similar fashion at the lower edge. The circular flounce adds fulness to the edge of the skirt without bulk at the top of the flounce.

Various suggestions for the decoration of ruffles will be found on pages 235, 237, 273, 275, and 284 (Fig. 168).

OPENINGS AND PLACKETS

1. **Box plaits** are used as a decorative means of fastening on corset covers, underbodices and night-dresses which fasten in front, instead of slipping over the head. Buttonholes are worked in the box plaits. Allowance for the width of the plait plus one-quarter-inch turn must be made in cutting. Fold toward the right side one-quarter inch; crease firmly; fold again on the right side the width planned for the completed box plait. Stitch by hand or machine one-eighth inch from each folded edge; featherstitching or chain-stitching may be used instead of stitching (Fig. 134).

2. **Hems** are used for the under side of the openings in corset covers, underbodices and night-dresses. Buttons are sewed through

the hem which is made a little narrower than the box plait on the upper side. Usually they are folded so there is a triple thickness of material.

Hem and fly for corset cover.—This method of finish conceals the buttons and buttonholes which makes it desirable for wear with very sheer dresses where one may not wish to have the fastening of the undergarment show.

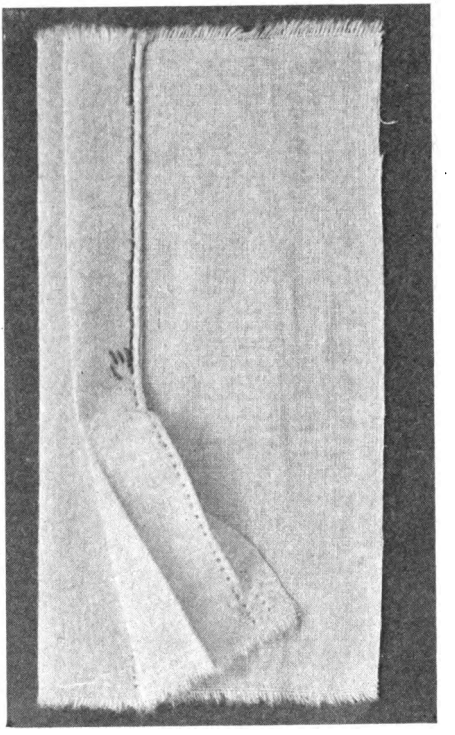

Fig. 135.—Hem and fly.

To make: Allow four times the desired width of the hem plus one-half inch. Fold the edge of the cloth one-quarter inch; measure from the crease of this fold one-fourth the amount allowed, minus one-quarter inch, and crease. Baste the hem thus formed, and crease a tuck which will measure one-eighth inch deeper than the hem and lie directly on top of it. Lay the tuck over the hem and stitch through together. The buttonholes are worked in the fly and it is tacked to the front of the corset cover between the buttonholes. If a fly is made under a box plait, do not make the first turn on the edge, but slip the raw edge under the fold of the box plait. The hem on the left side is made in the usual way (Fig. 135).

Hem for Petticoat Placket.—Very narrow hems are sometimes placed on each side of a petticoat opening, the hem on the right hand side folded to wrong side, so as to form a lap, stitched across the bottom in slanting line, and caught in the belt at the top (Fig. 136).

3. **Facings** are of two kinds, straight and bias. The straight facings are cut lengthwise of the material and are used on garments having straight or bias openings. In the latter, they prevent stretching of the opening in the wear of the garment. They are used on corset covers, night-dresses (straight openings), petticoats and drawers (straight or bias openings).

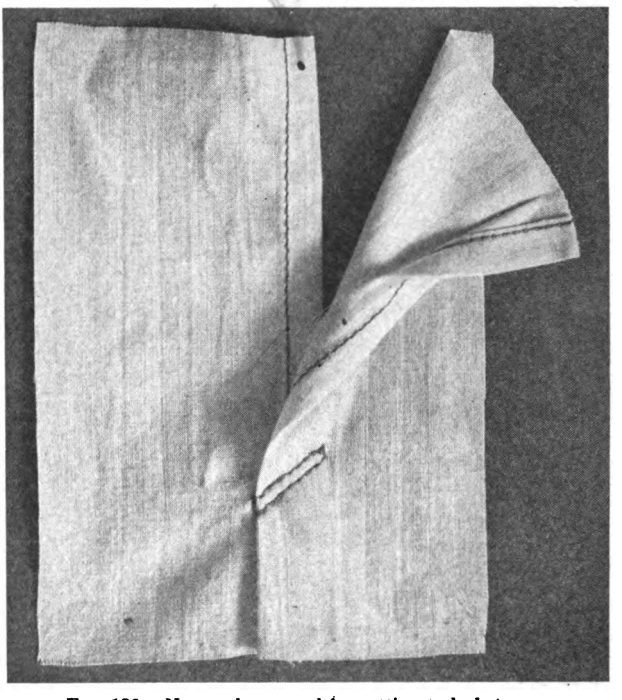

FIG. 136.—Narrow hems used for petticoat placket.

Straight Facings for Corset Covers.—Should there be a scant quantity of material in making a corset cover, straight facings may be used in place of cutting box plaits and hems in one with the garment. Also, in place of allowance for an invisible fastening. In such cases, cut the garment the finished size, allowing seam to join to facing and the facing the finished size plus seams. Night-dresses may be treated in the same way.

Straight Placket Facings for Drawers (Closed).—Continuous

Facing (*bound and faced*).—(1) Cut a lengthwise strip of material twice the length of the placket, and twice the desired width of the facing, plus the seam (one and one-half inches). Place right side of facing to right side of garment, then, holding garment toward you, baste a seam one-eighth inch in width, to within one-quarter inch of the end of the placket; hold the facing straight and stitch by hand around the lower end of the placket, easing the fulness into the facing; continue stitching one-quarter inch above end of opening, then baste the remainder of the seam as on the first side. Stitch by machine, holding garment on top so as not to lay fulness in plaits. Crease firmly, desired width of extension, entire length; same amount again and turn on the front; first the center of the width of the facing, then on the line of the seam, turning seam toward facing on the front. Fold front part of facing on center crease, one-quarter inch beyond end of placket; turn in raw edges on line of stitching; this forms the extension. On the back of placket, cut facing away one-eighth inch beyond the center crease, turn in one-eighth inch on edge, and baste facing down to drawers along this fold. Hem facing, then close placket and stitch diagonally across the lower end to make firm (Figs. 137 and 138).

Petticoat.—Continuous Facing (*bound*).—(2) Proceed in the same way as described above for closed drawers, but do not cut any part of facing away; continue the same all around and lay upper side of facing back against skirt and catch at top by stitching of band (Fig. 139).

Invisible Closing.—For this placket facing, cut a lengthwise strip of material twice the length of the placket and three inches wide. Place right side of facing to right side of garment; hold garment toward you and baste one-eighth-inch seam to within one-quarter inch of the lower end of placket; stitch around point of placket, holding facing straight, stitches to be taken same distance from edge as rest of seam. When stitching has been carried one-quarter inch above the lower end of placket, finish basting seam on this side and then stitch all the way around by machine. Crease the seam firmly on the folded edge; measure three-quarter inch from fold and crease the length of the facing. Cut across the facing at the lower end of the placket to the three-quarter-inch crease. On the left hand side of the placket measure seven-eighth inch from the three-quarter-inch fold of the facing and cut the remainder of the

Fig. 138.—Completed facing.

Fig. 137.—Continuous facing for drawers placket, bound and faced; detail

cloth away. Turn one-eighth inch and crease; baste fold to the stitching of the facing, hem to stitching. This forms an extension as the under side of the facing. On the right hand side, turn facing back on garment; baste and stitch to hold first seam on edge. From the three-quarter-inch crease, measure out a scant one and one-half inch and cut off remaining edge. Turn this raw edge just to the

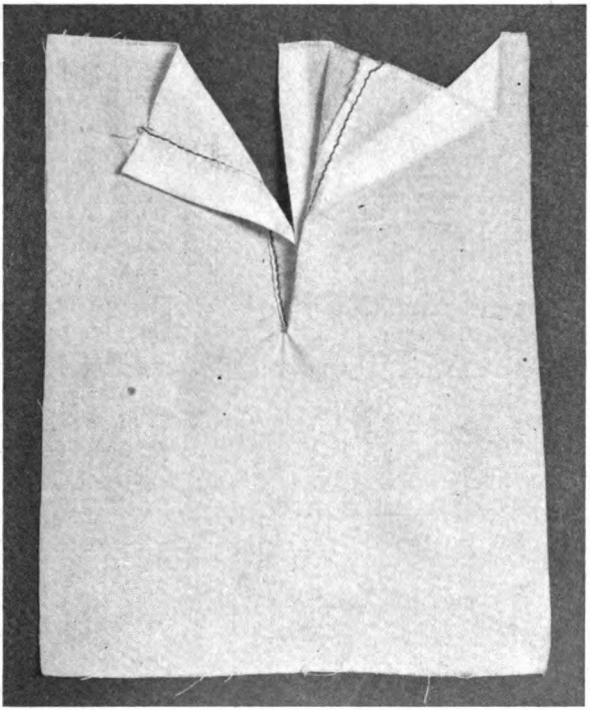

FIG. 139.—Continuous placket facing, bound, for petticoats or lingerie skirts.

first three-quarter-inch crease, baste, turn again on first three-quarter-inch crease toward edge of skirt, so that the fold does not quite reach the first seam of facing; baste; stitch on first three-quarter-inch edge, down to within three-quarter inch of opening, and from that point stitch diagonally through skirt, and extension to end of opening (Fig. 140).

Bias facings are used to finish the edges and waist line of open

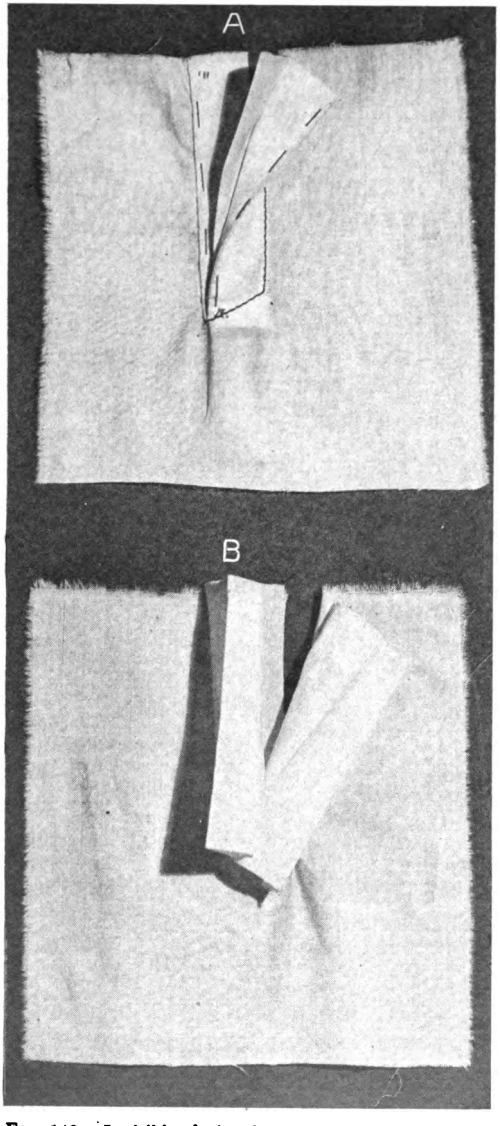

FIG. 140.—Invisible closing for petticoat; *A*, completed facing; *B*, detail of facing.

drawers, armholes of corset covers and lower edge and waist line of plain silk petticoats. Follow the rules in each case for bias cutting and joining strips of bias material, p. 391.

Corset Cover. — A bias facing is sometimes used to finish the armhole of a corset cover before sewing on lace. It is a strong finish, but not as attractive as the French hem, unless made very narrow and decorated with featherstitching or some other ornamentation (Fig. 163).

Drawers. — A bias facing is frequently used to finish both closed and open drawers at the waist line. It is also used to finish the front and back edges of open drawers. Such facing is used on drawers in Fig. 166.

Petticoat. — When one desires a very flat finish at the waist line of either cotton or silk petticoats, a bias facing may be used where all the fulness has been fitted out in seams or darts.

To Apply a Bias Facing.—When sufficient strips of material to cover the space have been cut and joined, place the right side of the facing to the right side of the garment, baste a narrow seam, stitch and turn directly on the edge and crease firmly. If material is inclined to slip, baste on the turned edge. Turn in the raw edge of facing, baste, and hem either by hand or finish with machine stitching (Fig. 141).

Shaped Facings.—It is sometimes necessary to shape the facings for the edges of garments. Cut the material the same grain as the garment, and as deep as necessary. The method of applying the facing is the same as for bias facings (Fig. 142).

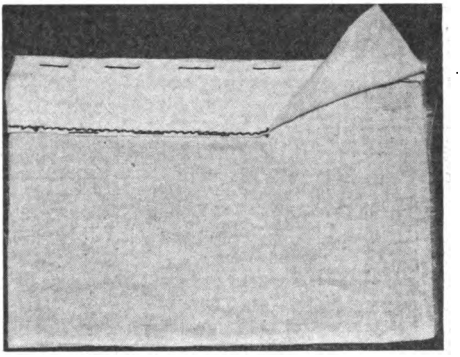

FIG. 141.—Bias facing.

Fastenings.—Buttons and buttonholes are more frequently used than other modes of fastening for undergarments. Rules for sewing on buttons, and making buttonholes, pp. 224–226.

Tapes are sometimes used for fastening drawers and petticoats around the waist.

Snap fasteners make a satisfactory fastening for plackets of petticoats. One must be sure, however, in using them on cotton garments to buy only the "warranted not to rust goods."

(*c*) **Waist Line.**—*Disposal of Fulness.*—Where there is extra material to be taken care of at the waist line in corset covers or night-gowns, it should be taken up with small tucks, or in gathers, set into a band. In either case, this will give a dainty appearance. For drawers or petticoats, plaits should be laid, or the fulness taken up in darts, or fitted out in the seams. Various methods of doing the above are given under the several garments.

Bands to confine the fulness and keep the garments in place are made of various materials, and any desired width: (1) *Material of the garment,* cut lengthwise in one or two pieces, according to the method of finishing. Use: Corset covers, drawers, petticoats or night-gowns. (2) *Of beading or insertion* for use on corset covers, under-

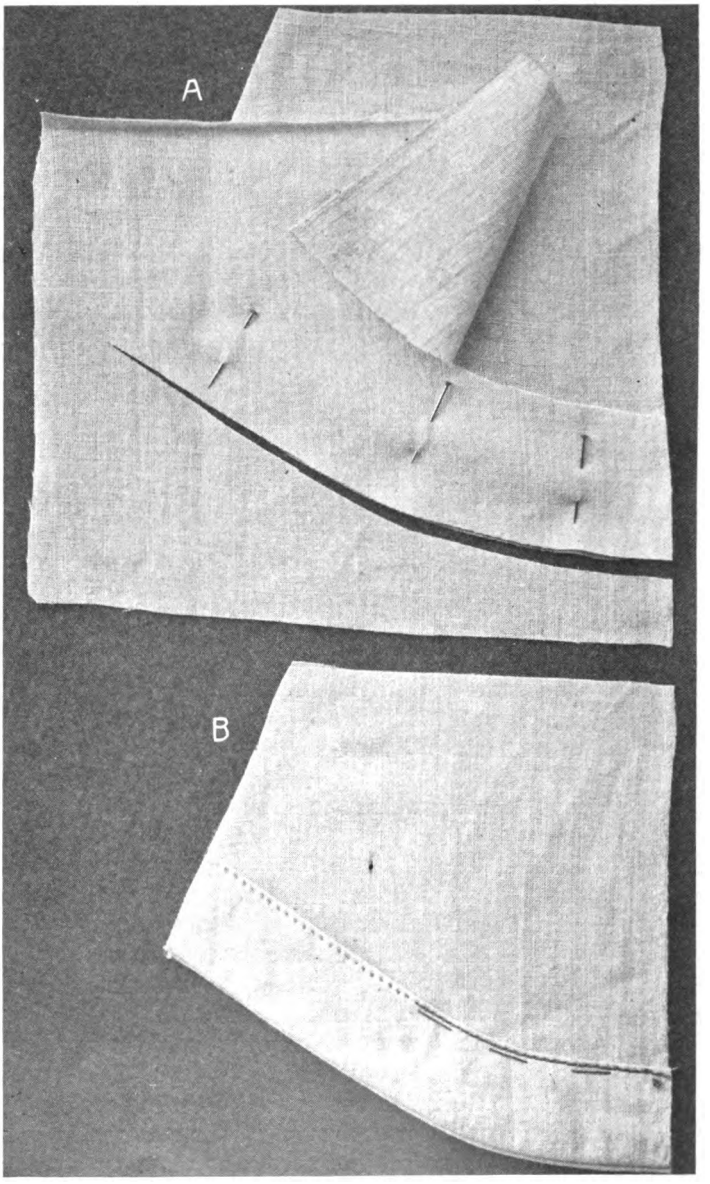

FIG. 142.—Shaped facings; *A*, cutting facing; *B*, completed facing.

bodices, combinations or night-dresses. (3) *Linen tape,* sometimes used for narrow bands on corset covers of heavy material, or for petticoats. May be of wide tape folded, or narrow, two thicknesses. (4) *Elastic,* used in hems on lower edge of underbodices or knickerbockers.

Facings.—Discussed under *Openings* and *Plackets.*

Peplum.—A peplum is a circular piece, four to five inches deep, set into the band of a corset cover to keep it in place. It is cut circular to do away with any unnecessary fulness at hips. Its front and lower edges are finished with narrow hems; the upper edge is set into the band of the corset cover.

Fastenings: Use buttons and buttonholes.

(*d*) **Neck Line.**—As the finish of the neck line may make or mar the appearance of the outer-garment, exquisite care should be given both to design and manipulation of materials.

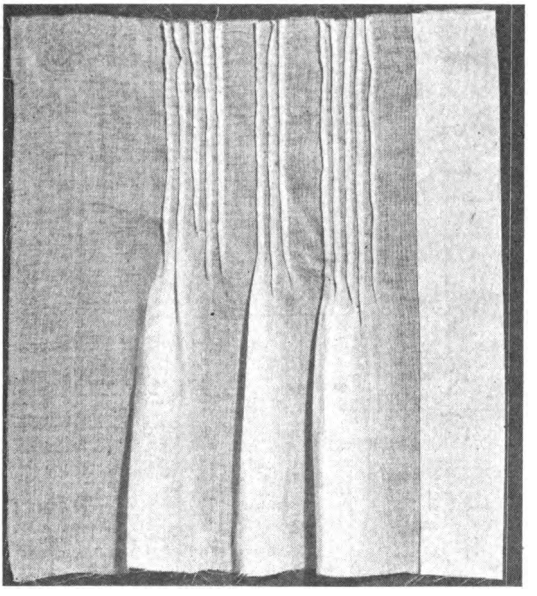

FIG. 143.—Fine hand-run tucks.

Fulness is sometimes held in place by means of tiny hand-run tucks (Fig. 143), by gathers, or by passing a narrow ribbon through eyelets worked in the top of the garment, or through lace or embroidery beading, footing, etc. (Figs. 143 to 150, and 156).

French Hem.—This makes a very attractive and satisfactory finish for application of lace and other types of decoration.

To make: Turn a very narrow him to the right side and baste; fold hem back to wrong side and crease firmly. The trimming for the edge, beading, lace or footing, is then overhanded to the double fold thus formed.

Decoration.—(1) *Beading* (embroidered, or lace, through which ribbon can be run), and *Lace.* Overhand beading to hem and lace to upper edge of beading (Fig. 144).

(2) *Insertion* (lace), *Entre-deux* and *Footing.* Overhand insertion to the hem, entre-deux (plain material cut away to cord, or to within one-eighth inch of cord) to the insertion, and both edges of footing (which has been folded through the center) to the upper edge, of the entre-deux (Fig. 145).

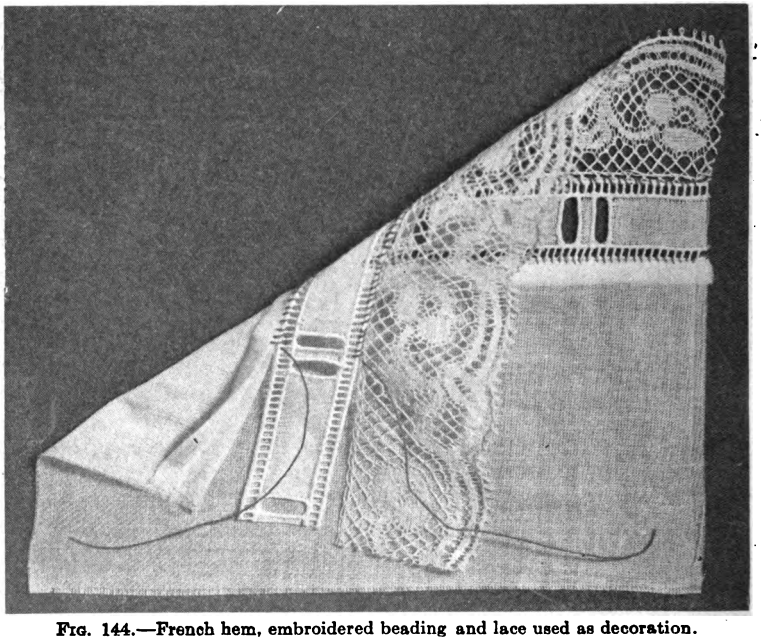

FIG. 144.—French hem, embroidered beading and lace used as decoration.

(3) *Lace and Eyelets.*—Overhand lace to hem. Work eyelets below hem to pass ribbon through (Fig. 146).

(4) *Featherstitching.*—Hem may be plain or edge of garment featherstitched over the hem (Fig. 147).

Gathers: (1) *Entre-deux and Lace.*—Gathers at the neck may be set into entre-deux with a seam, bound with margin of entre-deux and lace overhanded to the upper edge of the entre-deux (Fig. 148).

(2) *Finishing Braids or Bias Fold and Lace.*—Place a row of gathers one-eighth inch from the edge of the garment; a second row,

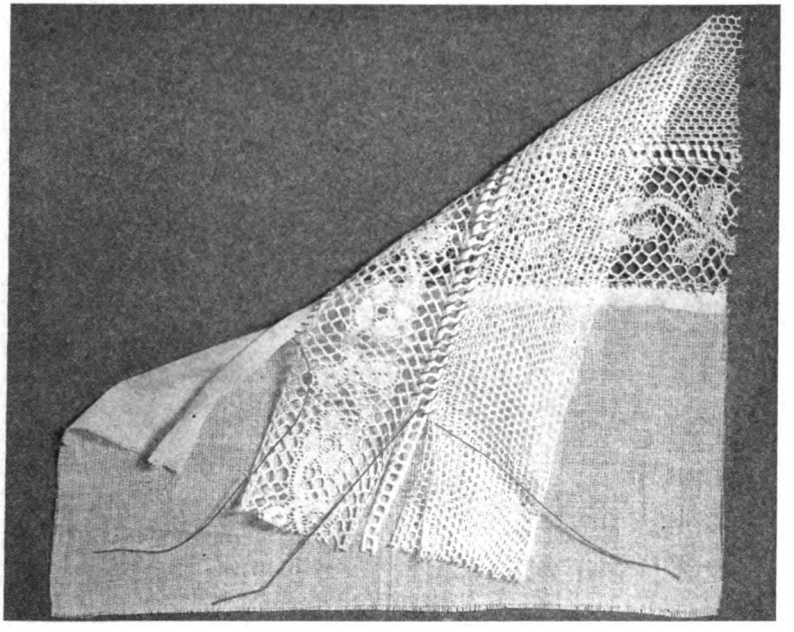

FIG. 145.—Lace insertion, entre-deux and footing used as decoration.

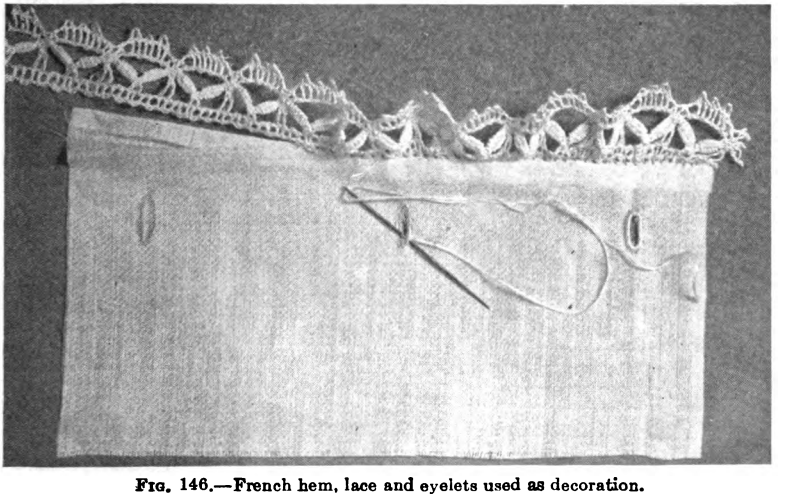

FIG. 146.—French hem, lace and eyelets used as decoration.

the width of the finishing braid, below the first row. Lay the upper edge of any attractive finishing braid, or bias fold, on the first row of gathers (on the wrong side of garment), letting the opposite edge

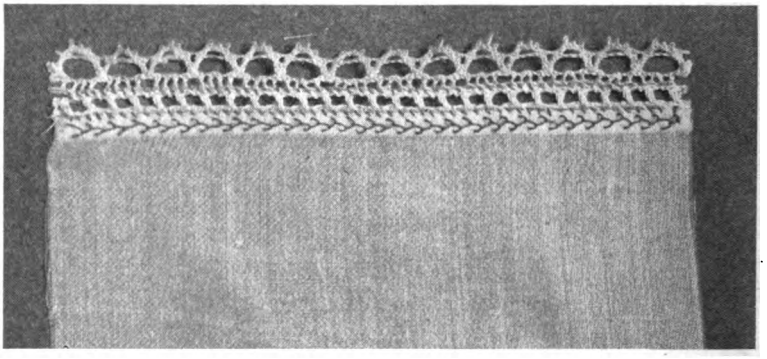

FIG. 147.—French hem, lace edge overhanded to hem, and hem featherstitched.

of the braid extend beyond the edge of the garment. Turn the braid to the right side of the garment, crease the upper edge of the

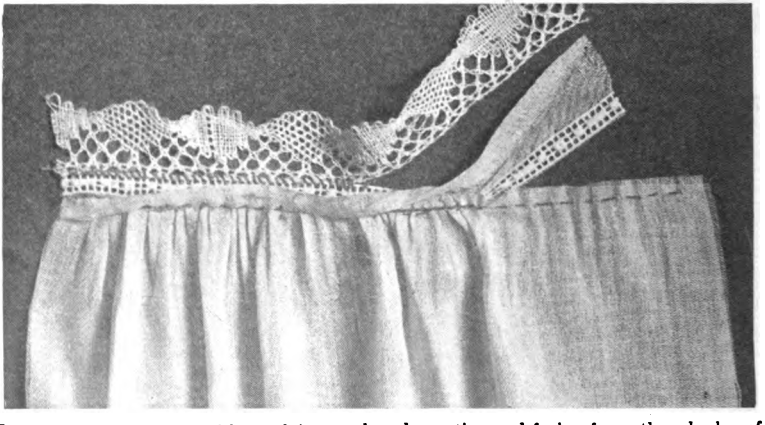

FIG. 148.—Entre-deux and lace edging used as decoration and facing for gathered edge of garment.

garment, and baste the lower edge of the braid to the garment, over the second row of gathers, and stitch to place. Lace may then be overhanded to the braid. If bias bands are used, featherstitching,

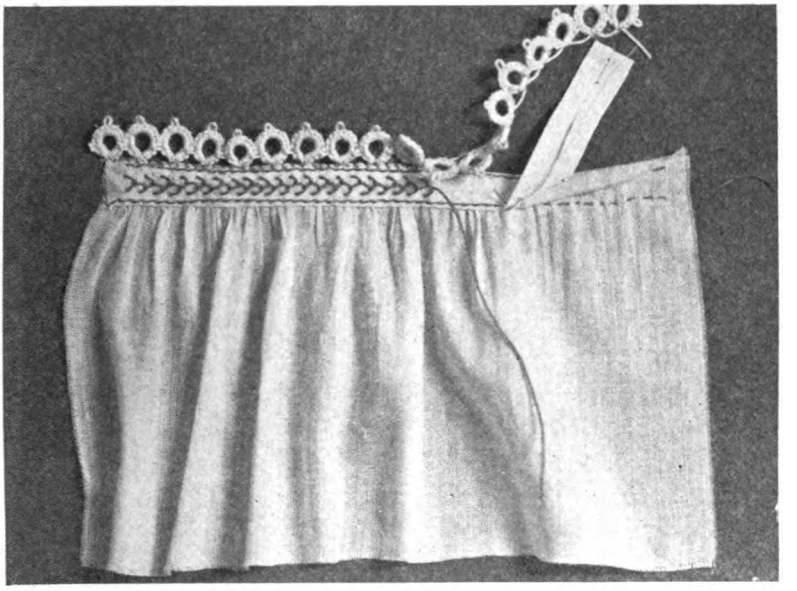

FIG. 149.—Bias fold of material, tatting and featherstitching used as decoration.

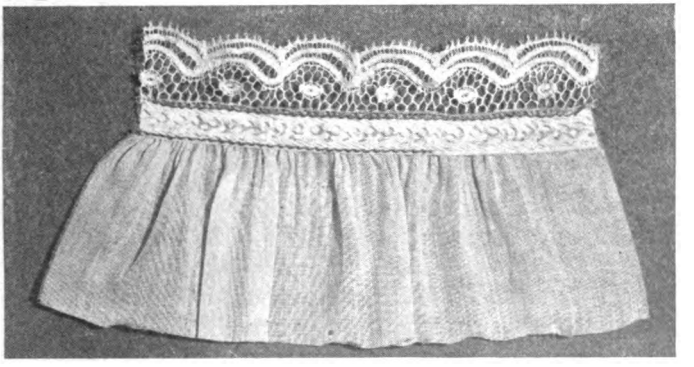

FIG. 150.—Featherstitched finishing, braid and lace used as decoration.

lazy-daisy or some such decoration will add to the appearance of the garment (Figs. 149 and 150).

(3) *Rolled Edge, Beading and Lace.*—The edge of the garment is sometimes rolled and whipped, to gather fulness to place, beading

is then overhanded to the rolled edge and lace overhanded to the beading (Fig. 151).

Embroidery: (1) *Embroidered Scallops.*—Fine scalloping, with eyelets worked below for the ribbon to pass through, makes a very attractive edge. Directions for working scallops, p. 409. A bit of hand embroidery, arranged in a pleasing design, on box plait and neck, make a most attractive "Sunday best" garment (Fig. 63).

Beading, Lace or Insertion on Raw Edges.—(1) Any of the above may be set a scant one-eighth inch below the raw edge of the material and whipped to it. The edge has the appearance of being rolled.

(2) Baste lace, etc., to the right side of the garment, hem the

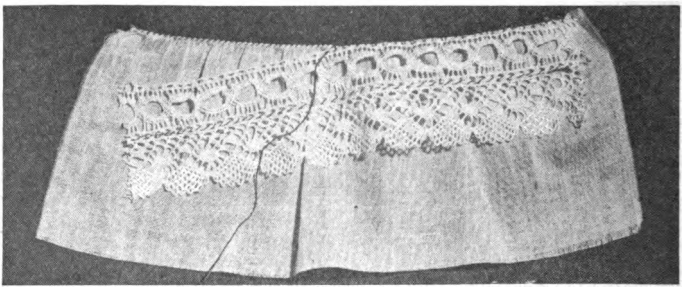

FIG. 151.—Edge of material gathered by rolling and whipping; beading overhanded to rolled edge, and lace overhanded to beading.

edge on the right side, taking small stitches on the garment with fine cotton. Trim raw edge of material on wrong side to one-sixteenth inch. Whip raw edge to garment, which will make it look somewhat as if the edge were rolled. Beading or footing may then be overhanded to the lace (Figs. 152 and 153).

(3) *Lace Fagotted.*—Lace may be applied as above and fagotted instead of being hemmed. The raw edge can be trimmed away close to the fagotting, as is done in power hemstitching (Fig. 154). Lace may also be hemmed to material, on right side of garment, the material cut away on wrong side and whipped to lace (Fig. 155).

EMBROIDERED EDGING, INSERTION OR ENTRE-DEUX

(1) *Embroidered edge or beading,* the correct size for the neck, may be used to hold the gathers in place and serve for a facing as

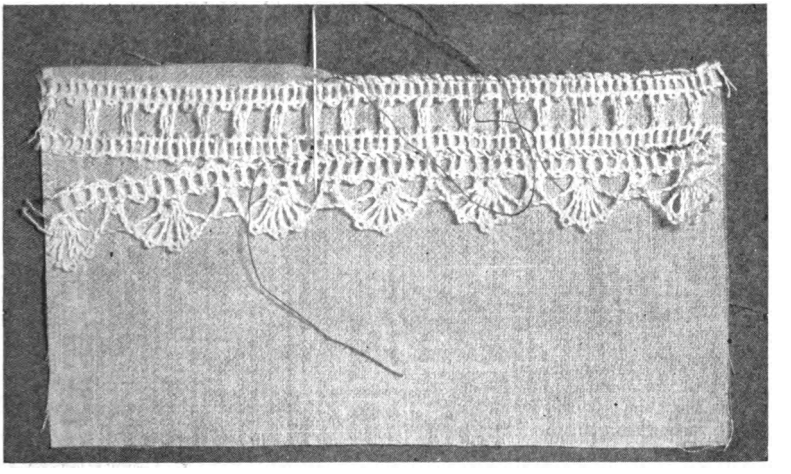

FIG. 152.—Lace beading overhanded to raw edge; lace edging overhanded to beading.

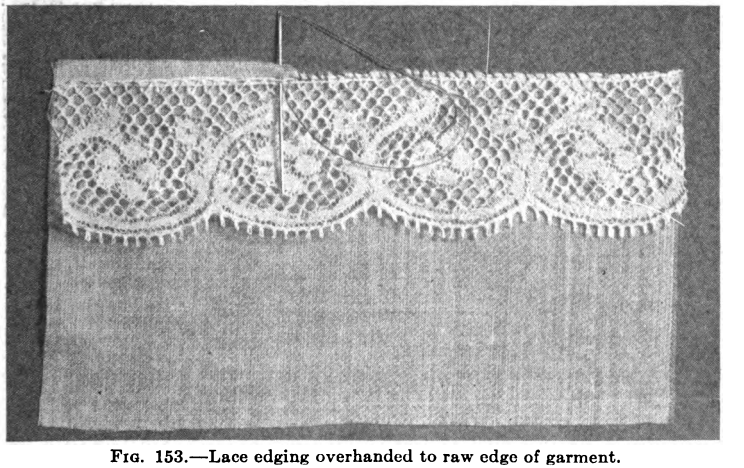

FIG. 153.—Lace edging overhanded to raw edge of garment.

well. Place two rows of gathers around the top of the garment, one-quarter inch apart. Draw the gathers to fit the neck, trim the plain part of the edging away so that there is sufficient material beyond the embroidery to serve as a facing, then lay the right side of the garment to the right side of the edging, the finished edge lying in reverse position, letting the line of gathers come just beyond

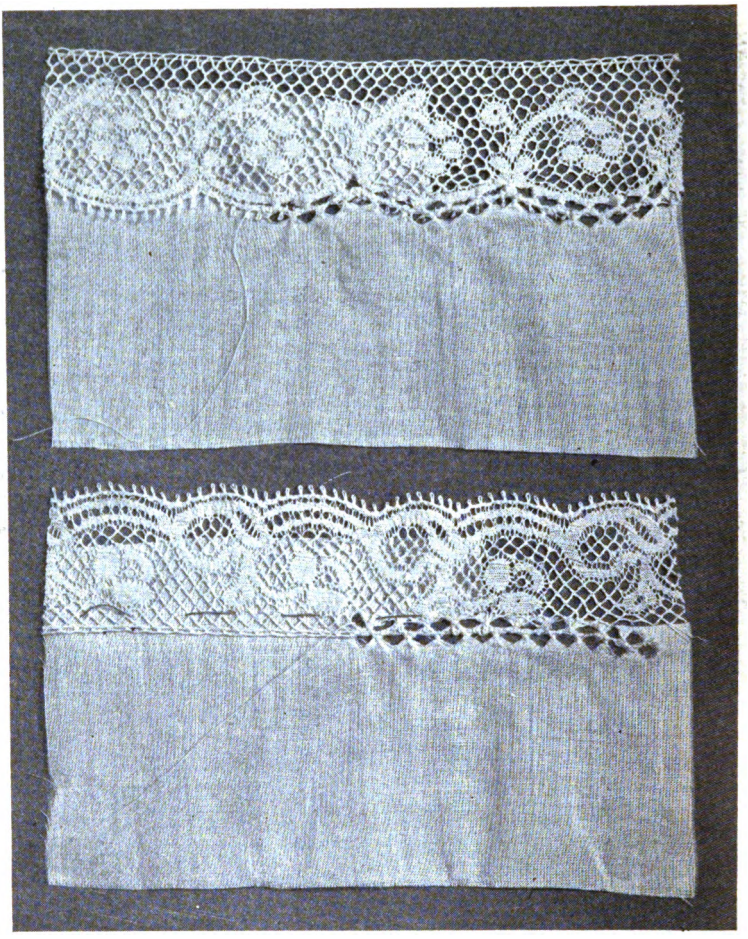

FIG. 154.—Lace fagotted to material.

the embroidery of the edging; baste and stitch on the line of gathers. Remove bastings, turn edging down to position, crease seam, turn in one-eighth inch on plain edge, second row of gathers, baste and stitch to garment (Fig. 156).

(2) *Edging and Beading with Gathers.*—Draw gathers to fit neck, set into entre-deux with seam bound with surplus material, and edging, which is also gathered into entre-deux with bound seam.

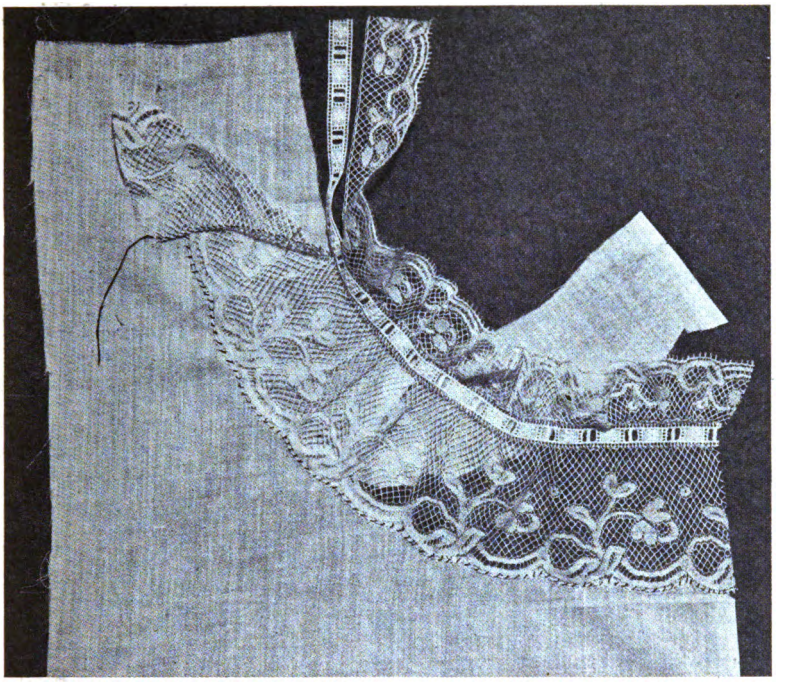

FIG. 155.—Lower edge of lace edging hemmed to material; raw edge of material whipped to lace; lace gathered to fit at top; beading overhanded to lace, and narrow lace edging to beading.

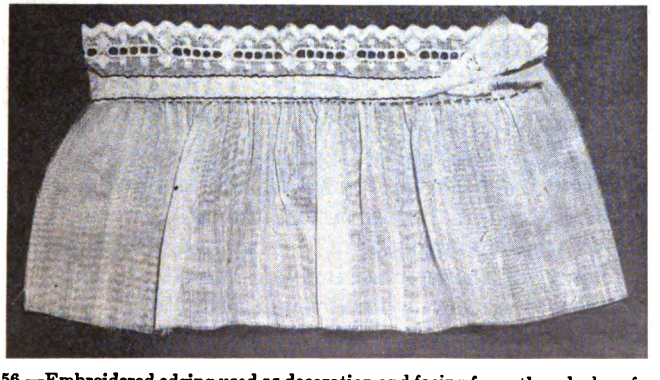

FIG. 156.—Embroidered edging used as decoration and facing for gathered edge of garment.

(This finish is not attractive in any but the sheerest fabrics.) (Fig. 157.)

(3) *Entre-deux or Embroidered Insertion and Lace.*—Set the entre-deux or insertion into the neck of the garment in any approved way. The upper edge of these may be treated in one of two ways: (1) Trim the plain material close to the embroidery on entre-deux or insertion and overhand lace or footing to this, or (2) leave

FIG. 157.—Embroidered edging, gathered, and beading used as decoration and finish for gathered edge of garment.

a seam of one-eighth inch of material and overhand lace to this raw edge (Fig. 158).

To Join Lace.—When joining fine laces, for the neck of corset covers, night-dresses, lingerie waists, lay one end of the lace on top of the other, so that one pattern covers the other, matching exactly, and baste; sew around one side of pattern, and through mesh in an irregular line, with fine hemming and an occasional buttonhole stitch; or if lace is not very fine, use all buttonhole stitches. Trim the ends of the lace away close to the buttonhole stitches; the join will look like an irregularity in the weave. Cluny and other laces

that ravel badly will need to be joined by a seam, and the ends hemmed or buttonholed to keep them from fraying out (Fig. 159). To miter lace an attractive finish can be made by fine buttonholing or embroidery.

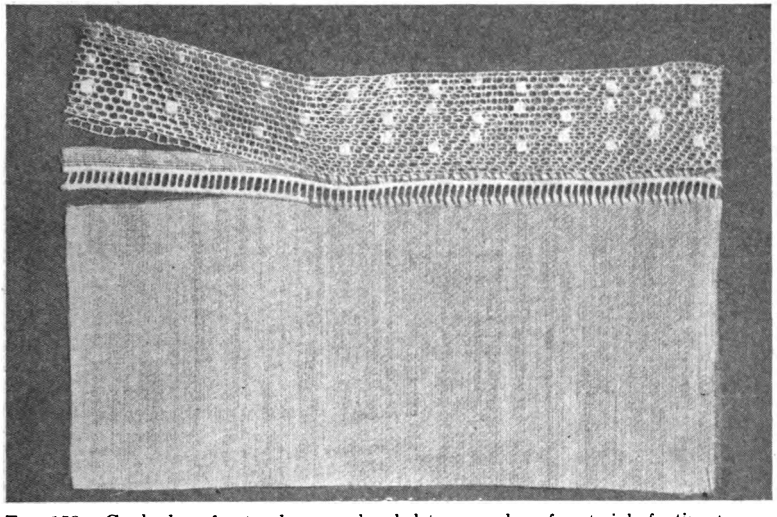

FIG. 158.—Cord edge of entre-deux overhanded to raw edge of material; footing to raw edge of entre-deux.

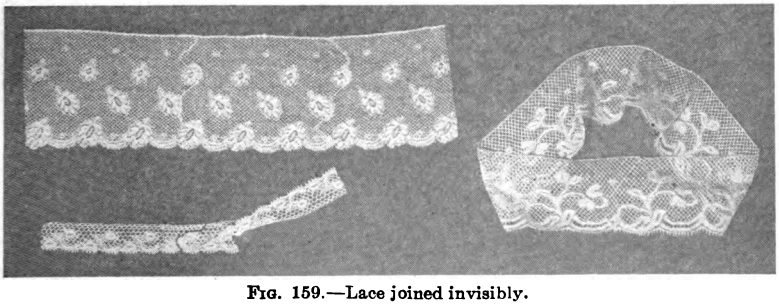

FIG. 159.—Lace joined invisibly.

To Join Embroidery.—Match the pattern, either between the scallops, or directly through the center. Use a plain seam, overcast, hemmed fell, or buttonhole the two raw edges, when mitering corners, or in making seams (Fig. 160).

Ribbons.—Washable ribbon is best to be used for undergarments.

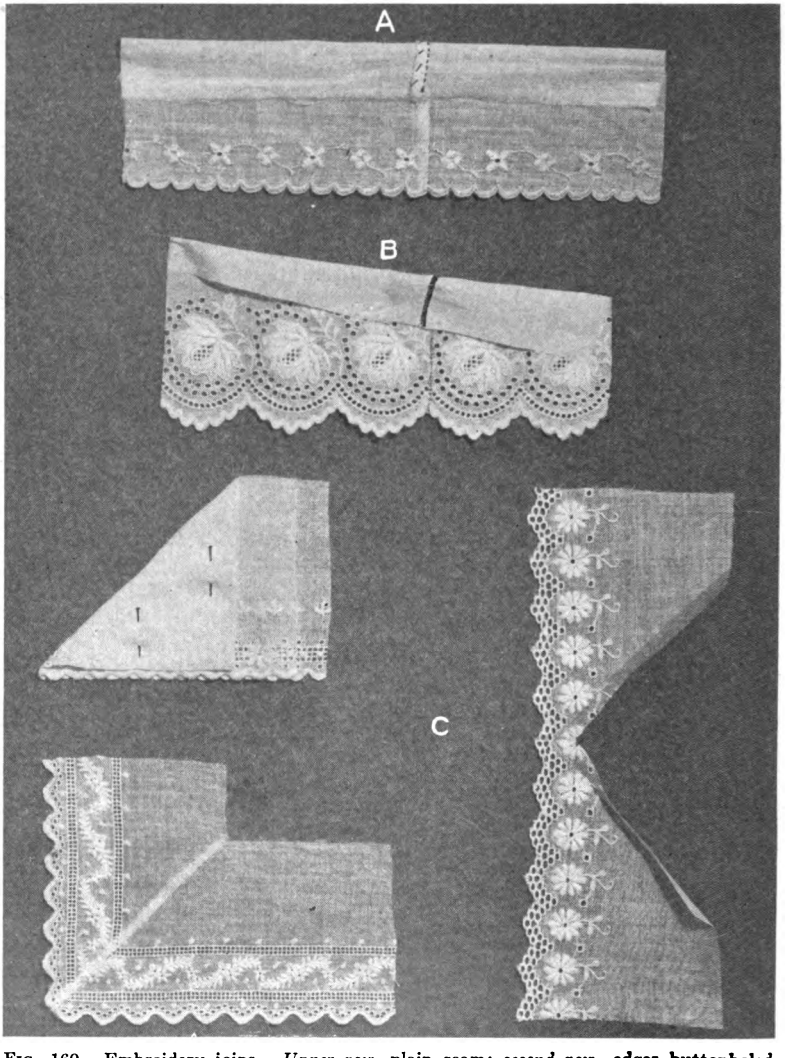

FIG. 160.—Embroidery joins. *Upper row*, plain seam; *second row*, edges buttonholed together; *lower row*, mitered corner with details of making.

This will retain its freshness longer if removed from the garment and washed in cold water, with Ivory soap, by itself, stretched and allowed to dry, or pressed with moderately warm iron when nearly

dry. The choice of color will depend upon individual taste; white is always dainty and does not in any sense betray lack of good taste; if color is worn good taste requires that it be dainty. Linen bobbin, such as is used in the necks of infants' dresses, or lingerie braid, the latter to be had in colors, are satisfactory substitutes for ribbon. A tiny chain of Irish crochet thread, made by needle or fingers, is sometimes used.

(*e*) **Armhole.**—The most attractive way to finish the armhole of a corset cover or underbodice is to repeat the finish of the neck, omitting, unless specially desired, the beading and ribbon arrangement. A bias facing is sometimes substituted for the various other finishes shown here.

(*f*) **Sleeves.**—A plain seam, bound with a bias strip of the material of the garment, makes the best plain finish for a sleeve at the armhole. Entre-deux is sometimes set into the armhole and the sleeve with a French seam, and the sleeve gathered and set into the entre-deux in the same way, or else rolled and whipped on.

Sleeve at Lower Edge.—Repeat the design of the neck finish.

SUGGESTIVE QUESTIONS

1. How should material be prepared for cutting out garments?
2. State a general rule for placing a pattern on material for cutting out undergarments.
3. How would you baste for fitting: (1) Corset cover, (2) petticoat?
4. Name and describe the making of three seams which can be used in making undergarments.
5. Describe three kinds of decoration suitable for petticoats and drawers.
6. Describe the method of bias cutting; joining bias strips.
7. Name three kinds of placket facings and tell where used.
8. Describe the making of one of the above.

CHAPTER XIII

CONSTRUCTION OF UNDERGARMENTS: CORSET COVERS AND PETTICOATS

CORSET COVERS

Suitable materials	*Suitable trimmings*
Batiste Berkeley cambric Cotton crêpe Linen Longcloth Nainsook	1. Lace edging. Lace insertion Lace beading (a) Valenciennes.. French / German (b) Cluny (c) Torchon (d) Irish (e) Filet 2. Embroidered edging Embroidered insertion Embroidered beading Entre-deux, suited to material of garment 3. Binding: Bias strips.. Colors / white 4. Braid 5. Tatting

NAINSOOK is one of the daintiest cotton materials used for making corset covers. It admits of very simple or elaborate decoration, wears well, and launders easily.

For hard wear, however, with wool and heavy cotton and linen waists, longcloth and Berkeley cambric will give longer service. Crêpe commands its place as a material needing no ironing, so is to be considered for that quality, if for no other. It can be simply but daintily trimmed, and, worn under garments not too sheer, does not betray itself as the inexpensive material which it is. Crêpe gives fairly good service, but when it begins to show signs of wear, will suddenly tear in slits along the strips of "crinkles."

Designing Corset Covers.—Bear in mind the essential things to be thought about: The use to which the garment will be put, *i.e.*, worn with lingerie or heavy waists, and base the choice of material and trimming upon that. Observe always simplicity of line and decoration. Use trimming in accord with the fabric. Strive first

for faultless line, and then for excellent finish. Do not neglect to try the garment on to test the lines of neck and armhole.

Quantity of Material and Trimming.—To calculate, open the pattern, lay the straight edge of the front on the edge of the table (representing the fold of the goods); slip the back into the curve of the neck of the front, the straight edge of the back on a fold (edge of table). Lay peplum pattern, so that center back is on the fold. Then measure from the lowest end of the front to the highest point on the peplum, to ascertain the quantity needed for the body of the corset cover. For trimming, measure neck curve and armhole, and calculate, allowing plenty of material for seaming and matching patterns.

Making Corset Cover.—The garment chosen for instruction in the principles of making, is a corset cover to be cut from a pattern developed from a shirtwaist pattern, which has already been tested and fitted. The garment is to be simply trimmed with tucks, beading, lace and featherstitching (Fig. 161). It is important at the beginning to gain a clear understanding of constructive principles, rather than spend a great deal of time on non-essential points which will be covered later in the making of many garments.

1. Prepare material according to directions on p. 227.

2. *Box plait, hem and tucks* should be placed in the material before cutting the garment out. For this purpose:

(*a*) Measure the length for the waist line on the center front of the pattern to the neck curve.

(*b*) Measure from the cut ends of the material on the fold, the same amount as above, plus two inches; place a pin, and from this pin trace along the woof threads for three to four inches.

(*c*) Decide on the finished width of the box plait (one inch), and cut from the fold, on the traced line, through both thicknesses of cloth, twice the width of the plait, plus the turn. Cut through the fold to cut ends of the material.

(*d*) Lay box plait and hem, with regard to the right and left hand side when garment is cut; baste to place.

(*e*) Plan, measure and run tucks (p. 400), leaving ends of thread at both top and bottom when tuck is finished, so that after fitting, if desired, they can be lengthened or shortened without breaking or joining threads.

(*f*) Lay box plait and hem together, folding both directly through the center.

FIG. 161.—Corset cover, simple decoration, tucks, featherstitching, embroidery beading and lace.

3. *To Cut.*—(*a*) Place broad end of the front of the pattern to the cut ends of the material, the center front on the center of fold of the box plait.

(*b*) Place the back of the pattern with its straight edge on the lengthwise fold, the neck and shoulders fitting into the curve of the front.

(*c*) Place the pattern of the peplum so that the center back is on the lengthwise fold of the material. If by any mistake there is a scant quantity of material, the pattern may be placed so as to have a seam in the center back. In this case set the pattern far enough from the selvedges so as to allow for cutting the belt.

(*d*) The belt should be lengthwise of the material, because the warp threads are strong and will stand strain when the garment begins to wear. Cut it three to four inches longer than the waist measure and one and one-quarter to one and one-half inches wide. See that seam allowance is provided for, but that there is no unnecessary waste. Pin pattern to place.

(*e*) Cut out, according to directions on p. 96. If by any chance the tucks should have been cut through in cutting out the neck curve, draw the thread up from the bottom, where a generous length should have been left.

(*f*) Trace the waist line; then from the waist line up, trace the underarm seams; trace neck and shoulder lines, all directly around the edge of pattern.

(4) *To Baste for Fitting.*—(*a*) Follow directions for basting shirtwaists. Seams on wrong side, p. 96.

(*b*) Gather across back within two inches of the underarm seams and on the fronts from the center to within three inches of the underarm seams.

5. *To Fit.*—(*a*) Place the corset cover on the figure for which it is being made.

(*b*) Lap box plait over hem; pin.

(*c*) Draw gathers to place at waist, being careful to keep underarm seam in good position; fasten around a pin.

(*d*) Fit according to the directions followed in fitting shirtwaists, p. 97. Be extremely careful of the lines at the neck and armhole. These must be especially good, when worn under a lingerie waist.

6. *Seams.*—(*a*) Hemmed fell, turned toward front, first stitching to show right side on top of seam.

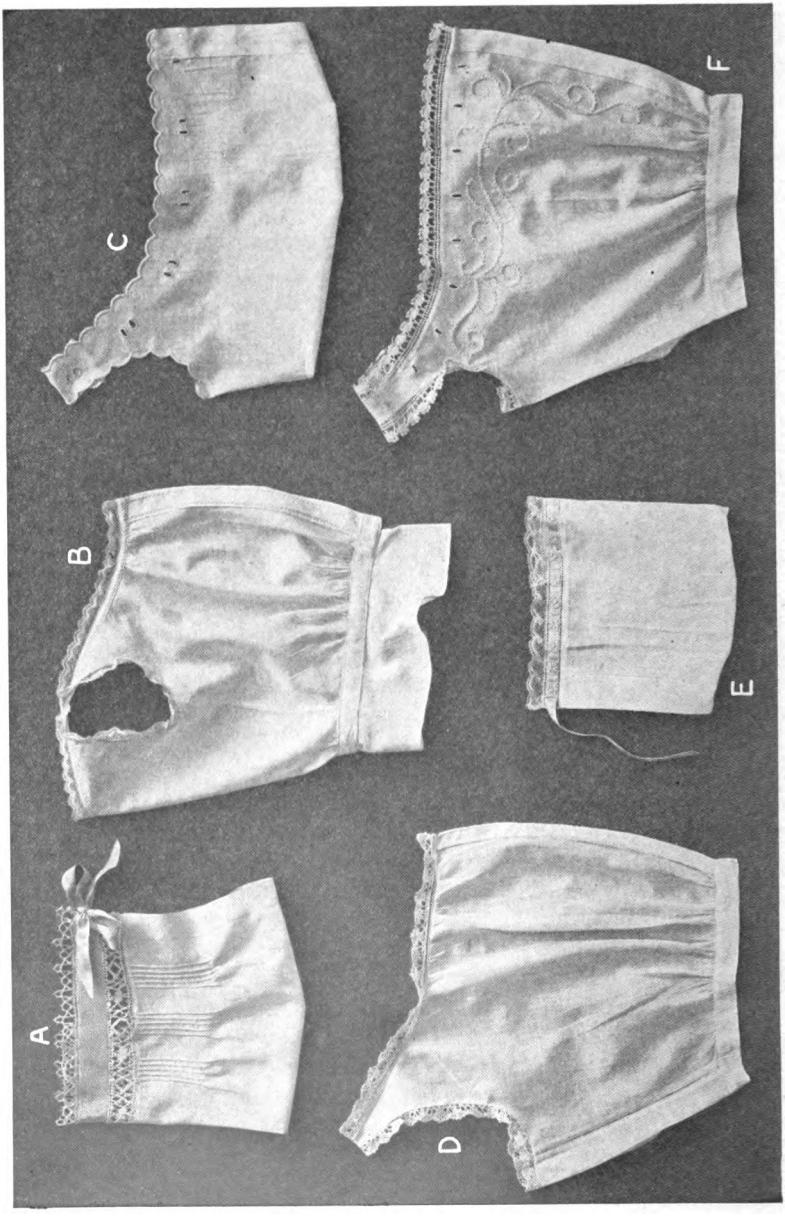

FIG. 162.—Suggestions for decoration of corset cover.

(*b*) Trim underside very narrow, so that the finished seam will be very neat.

(*c*) Entre-deux may be used as finish for seam. Place entre-deux between edges of seam, using very narrow French seams for finish.

7. *Box Plait and Hem.*—(*a*) Stitch box plait and hem by hand or machine; the box plait may be featherstitched instead, if desired.

8. *Tucks.*—(*a*) Finish tucks; fasten thread on underside of garment, taking two stitches and passing needle through loop of second stitch.

9. *Waist Band.*—Cut band in one piece, three to four inches longer than waist measure, and twice the desired width plus seams; then:

(*a*) Find the center of the length of the band and crease firmly. Also find the joins for center front by measuring from the center of the belt, one-half the waist measure toward each end; crease. Mark the creases with line of small stitches.

(*b*) Place the right side of the band to the right side of the corset cover, center of band to center back of garment; pin the center front of the band to the center of box plait and hem; measure the band to the end of box plait and hem, fold back one inch and cut the remainder away. See that the gathers in the back are so adjusted that the underarm seams are the same distance from the center back on both sides of the center, pin to place.

(*c*) Pin plain part of corset cover to band first, then adjust the gathers, distributing them very carefully. Baste on gathering thread; keep them the same distance from edge of band throughout. Try garment on to be sure the adjustment is correct.

(*d*) Stitch band to garment, letting stitching come just outside basting. Trim seam, turn, and crease very hard.

(*e*) Turn in edge and ends of second piece of band, baste to wrong side of garment, hem (vertical hemming) each gather down to band.

10. *Peplum.*—(*a*) Finish the bottom of the peplum with a very narrow hem, which being bias, should be pressed between the fingers, not creased as in a straight hem.

(*b*) Place the centre of the upper edge of the peplum to the center of the waist band, right sides of peplum and garment together; baste, trimming ends of peplum so they will allow a narrow

hem like the lower edge, yet just meet in the center. Stitch seam; turn in lower edge of under band with marks together; hem to the peplum.

11. *Neck.*—(*a*) French hem, beading, lace and featherstitching. Fold a very narrow hem to right side of garment, etc. (see p. 251, for description of finish).

12. *Armhole.*—(*a*) Same finish as neck, omitting the ribbon

FIG. 163.—French corset cover, hand-embroidered eyelets and design.

beading, and holding lace a little full, especially each side underarm seam.

(*b*) Featherstitching may be applied to hem on neck and armhole, in keeping with the decoration of the box plait. Other types of decoration might be chosen, suggestions for which are shown in Fig. 162. The corset cover shown in Fig. 163 is a good model of fine French embroidery and eyelets, the design as it is outlined being very graceful and dainty. The price of the garment was $2.25. It

was purchased in Switzerland. The price paid there for labor is very small.

13. *Fastenings.*—(*a*) Buttons: The size of the buttons should be in keeping with the width of the plait or hem in the opening. Too large a button mars the effect of the whole plait. A button the diameter of which is one-quarter inch is a good size, for a plait three-quarter inch in width. The kind and number of buttons depend on individual taste; three to five, according to the length of the garment from waist to neck line, the top button being about one and one-quarter inches from the neck line, the bottom button the same distance from the waist line. Linen-covered buttons or good pearl buttons with two or four holes are satisfactory kinds to use. The pearl button called a "fish eye" button is very smooth, easy to fasten and attractive. For method of sewing on, see p. 226.

(*b*) Buttonholes are cut lengthwise in front openings; crosswise in back openings of corset covers and underbodices. Those with bars at each end are preferable because of their strength. For method of making, see page 224.

14. *Ribbons.*—In drawing ribbon through the beading or footing, be careful not to twist it. Use wash ribbon, lingerie braid, linen bobbin, or crochet cord.

PETTICOATS

Suitable materials	*Suitable trimming for same*
Berkeley cambric Long cloth Nainsook Crêpe (cotton)	1. Self-trimming (a) Bands (b) Flounces 2. Embroidered edging Embroidered insertion Embroidered beading Embroidered flouncing (a) Soft finished cambric (b) Nainsook (c) Swiss 3. Lace edging Lace insertion (a) Valenciennes (French, German) (b) Cluny (c) Torchon (d) Irish (e) Filet 4. Tatting Finishing braid Serpentine braid

(To suit material of petticoat)

Piqué Poplin (cotton)	Embroidered scalloping
Sateen Percale Chambray	1. Ruffles or banding of same material 2. Ruffles of heavy net with stitched bands of material
Silk: 1. Taffeta 2. Pongee 3. Crêpe de chine 4. Satin 5. Messaline	1. Ruffles of same 2. Lace; shadow, etc., for evening wear
Brilliantine	Bias flounce of same material

THE list of materials given above covers a wide choice of fabrics, from which to select a petticoat.

Berkeley cambric and longcloth are suitable for petticoats to wear with cotton and linen dresses. Tucked flounces or bands of the same material may be used for simple decoration, or the flounces may be made of fine nainsook, batiste or Swiss, decorated with lace or stitching; embroidered flouncing may be used.

Nainsook is suitable for the body of the garment only when worn as an outer petticoat or slip under lingerie or soft silk dresses.

Cotton crêpe is suitable for wear with dresses through which the texture of the material will not show. Its chief recommendation is its light weight and the fact that it requires no ironing.

Cotton poplin and *piqué* make a heavier skirt, warmer because so closely woven, but recommend themselves because shadowproof. Because of their weight and thickness, only an edge trimming is possible, embroidered scallops, or a plain or shaped hem.

Sateen has a soft luster, is closely woven, but is much lighter in weight than poplin, and serves the same purpose as a single garment. It does not, however, retain its freshness and crispness as long as the poplin after frequent laundering. Because of its durability, it is also used in black and colors instead of silk for petticoats. Being soft in texture, a variety of decoration is possible, ruffles, bands, scallops.

Percale and *chambray* sometimes have a season of popularity. Both are very durable. Chambray is softer in finish; percale suggests stiffening, although it can be laundered without. Both materials may be trimmed with bands or ruffles. Scalloping, in white, on pink or blue chambray, is attractive. A durable flounce for a striped percale or chambray petticoat can be made of heavy white curtain net, edged with bands of the material and finished at the

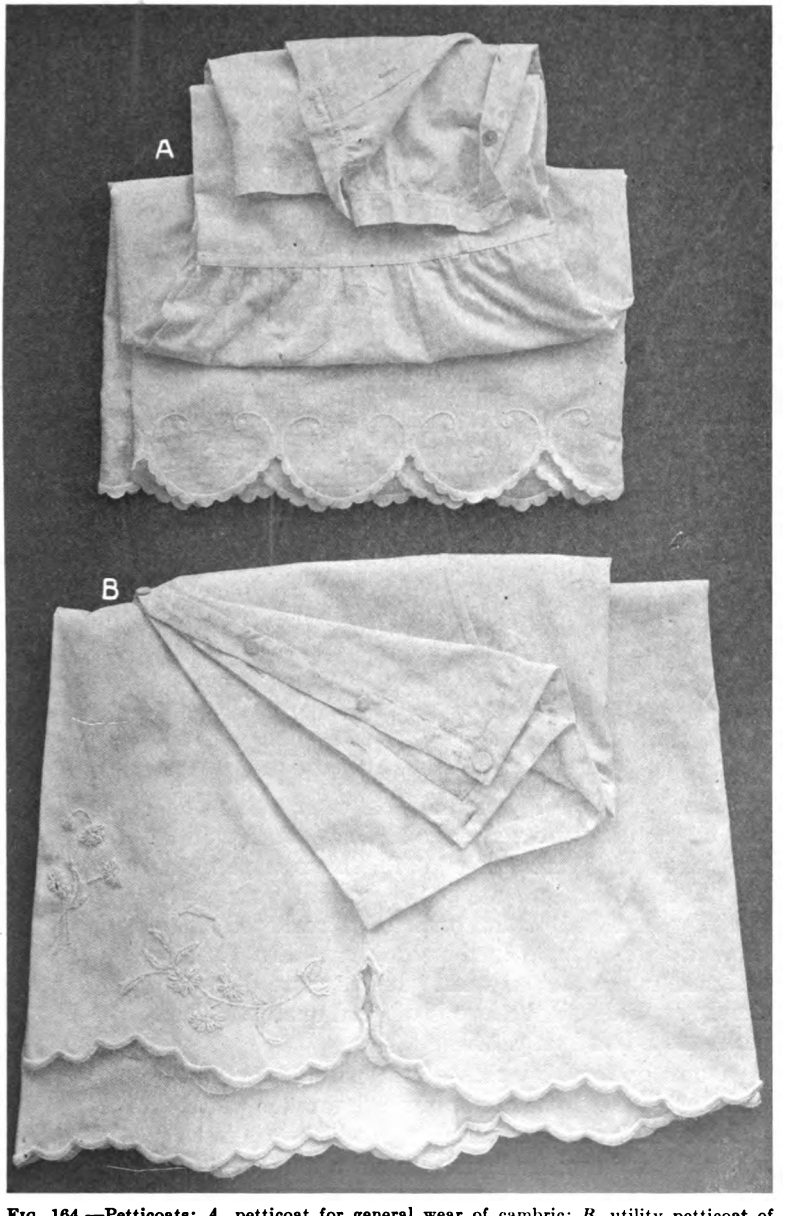

FIG. 164.—Petticoats; *A*, petticoat for general wear of cambric; *B*, utility petticoat of poplin.

top with the same. Bands of striped percale, cut crosswise of the material, are more attractive than those cut bias. Percale skirts in black and white stripes stand endless laundering; the color of chambray does not hold quite as well as percale.

Silk is very generally used for petticoats to be worn with tailored suits and dresses of wool, silk and linen. These may be finished with a hem at the bottom, or with dust ruffle, and gathered or plaited flounce, according to the fashion in width for the outer skirt. Silks of delicate colors for wear with lingerie or silk afternoon and evening dresses admit of more decoration, the flounces being made of the silk, chiffon, crêpe Georgette or lace.

Pongee and *crêpe de chine* are very durable, and retain their freshness for a long time, if carefully laundered.

Taffeta, messalines and *satins,* while not so durable, shed the dust easily. They are very generally used. A wide range of colors is to be had, as well as black and white.

Brilliantine, like percale, has good qualities. It is durable, sheds dust readily, is wiry, holds its luster, is light in weight. Good grades of brilliantine can be successfully washed.

Designing Petticoat.—Petticoats may be cut upon various lines. Either four- or five-gored patterns are satisfactory for general wear. If the outer-garment with which the petticoat is to be worn is of sheer material, unless there is to be a slip worn over the petticoat, consideration must be given to the location and number of seams in the petticoat, and also to the manner of its decoration, that there may be no danger of marring the effect of the dress. Unless one is having several petticoats, it is wiser to keep to simple decoration on the few, with perhaps additional touches on a very best one, for "dress up" use. Fig. 164*A* shows a petticoat with simple embroidered flounce, suitable for general wear. Fig. 164*B* shows a utility skirt of poplin, with edge scalloped and foot of skirt decorated with simple hand embroidery. Fig. 165 shows a petticoat designed for occasional wear. It has more decoration, but this is simply applied and the lace is of good quality. The cost of all the garments is listed on p. 14.

Quantity of Material.—This will depend upon the kind of garment to be cut, the height of the figure, the width of skirt desired, and the width of the material from which it is to be cut. For wide materials, and average figures, to cut a four- or five-gored petticoat,

will require: (1) Petticoat full length with hem and embroidered flounce, twice the length of the skirt, plus the hem; also quantity necessary for the flounce. (2) Petticoat full length, with dust ruffle and flounce of material, twice the finished length of the petticoat, and the material necessary for dust ruffle and flounce.

To Calculate for Ruffles and Flounces.—Dust Ruffle: Allow one and one-quarter to one and one-third times the width of the petticoat at the lower edge for dust ruffle. Divide the entire width of the ruffle by the width of the material to ascertain the necessary

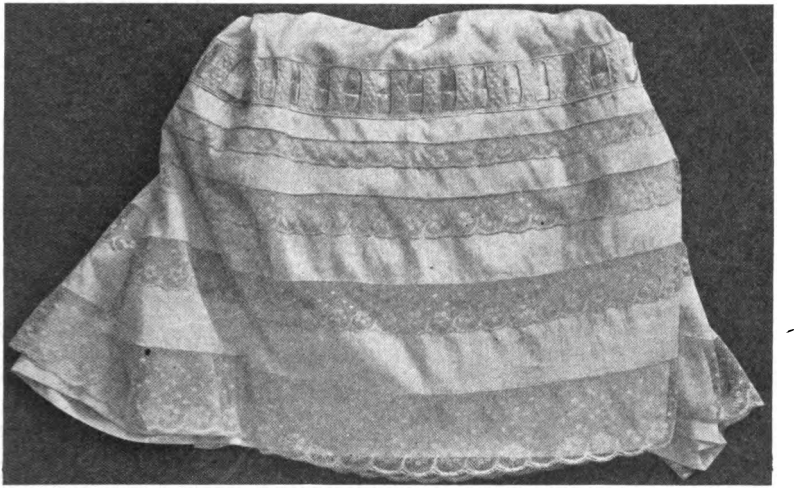

FIG. 165.—Petticoat for occasional wear, of nainsook, lace and embroidered beading.

number of strips. Multiply the desired depth, four to five inches finished, of the dust ruffle by the number of strips to ascertain the amount of material to allow.

Straight Flounce: Same as for dust ruffle, allowing one and one-third to one and one-half times the width of petticoat at the lower edge for the fulness of the flounce.

Circular Flounce (Sectional): Lay a section of the pattern on table as if for cutting out with center on a lengthwise thread. Lay another section beside this, reversing position, to see how many sections can be gotten out of certain width materials; then measure from the extreme end of one section, on a line with that of the other, to ascertain how much cloth would be required for the number

placed. For instance, if it requires three-quarter yard to cut two sections, and there are eight sections in the flounce, it will require four times three-quarter yard for the entire flounce.

Patterns.—Use either a drafted-to-measure or commercial pattern. If using the latter, buy pattern according to the hip measure, because it is easier to fit from the hip to the waist than to fit at the hip line.

Making Petticoat.—To demonstrate the constructive principles of petticoat making, a petticoat of longcloth cut in five gores, with dust ruffle of longcloth, and tucked flounce of nainsook, upper edge finished with embroidered beading, has been chosen. A drafted-to-measure pattern will be used.

Cutting.—Prepare material for cutting as explained on p. 227. Fold the two selvedges together; pin occasionally.

1. *Placing Pattern.*—Fold back lower edge of the pattern far enough to give finished length of petticoat, and three-eighth-inch tuck, one-quarter-inch seam and three-quarter inch for shrinkage, minus the depth of the dust ruffle (three inches). Place the pattern on the material in an economical way. If the quantity of material does not admit of this cutting, plan another, being sure that the straight edge of the front gore is on a lengthwise fold of the material and the straight edge of the side and back gores are on the warp threads, allowing one-inch seams on all lengthwise edges, one-half-inch at waist, nothing at lower edge. Pin to place, or weight. Use tape measure to mark seam allowance, and cut along end of measure.

2. *Tracing Seams.*—Trace waist line, also hip line, from edge of pattern to one-half inch beyond seam lines only; trace seams from hip line up and down; trace marks for joining gores; trace darts, if any.

3. *Basting Seams.*—Before basting seams, decide on the kind to be used on this garment, and baste accordingly, for French seam or stitched fells. Lay straight edge of gore on the table, with bias edge of next gore on top, to prevent stretching the bias edge. Where there are two bias edges, lay the less bias on table, the greater bias on top. Pin seam lines together, having waist and hip lines meet (hem line also when used); having pins at right angles to seams. Use small stitches, twelve inches below waist line. Leave back seam open from twelve to fourteen inches for placket.

Prepare Waist Band: Take a lengthwise strip of material two inches wide and four inches longer than the waist measure, turn in both lengthwise edges of band one-quarter inch, crease very hard. Find the center of the length and mark with thread; measure one-half the waist measure on each side from the center of band; mark with thread. Turn one end of band on the mark and crease; measure three-quarter inch outside the mark on the other end, turn and crease; then fold through the center lengthwise, crease and baste near fold.

4. *Fitting.*—(*a*) Place petticoat on figure for which it is being made. (*b*) Pin back seam together on tracings. (*c*) Pin petticoat to figure at hip in center front, sides and center back (see that seams turn toward front). (*d*) Pin to figure at waist line, laying plait in back if desired, arranging fulness ready for gathers, or fitting smoothly for plain back. (*e*) Look petticoat over and note the following:

1. Does it set easily, or is it tight?

2. Do seam lines carry straight up and down, or do they slant sharply toward the front or back?

3. Is the width at the lower edge satisfactory?

4. Does the lower edge hang away an even distance from the floor?

To Alter: 1. If the petticoat fits well, but is tight, this can be corrected when stitching the seams. It must always fit easily, so as to allow for shrinkage.

2. Should the seam lines slant too much to the front, rip the seam, and repin it, letting out on the one side, and taking up on the other until the seam falls in proper line. This can sometimes be pinned without ripping the seam. The seams may slant a trifle toward the front, above the hip line without causing a bad line. Fit one side only. To alter a seam that has been pinned in position, trace along the line of pins, remove pins, open seam; also the corresponding seam on other side. Place corresponding pieces together, trace new lines, rebaste seams.

3. If the petticoat is wider than desired, the extra width can be taken out in the seams, being careful if there is much to take out, not to remove it all from one seam.

4. To correct the line at the lower edge, use a drafting square, a yard stick, or skirt marker (preferably the latter), and measure

from the floor the height desired; mark with pins, remove, turn back on line of pins and baste.

When corrections have been made, pin belt around waist, letting outside edge fold back, so under side can be seen; try petticoat on again, pin to under side of belt, so that, if necessary, a new waist line can be marked on petticoat; pin back seam together. Approve alterations, see that the line at lower edge is even, and waist line correct. Remove petticoat. Trace along lower edge of band to mark new waist line in petticoat; also mark with colored thread, where seams or darts touch band. Remove band.

5. *Seams.*—Stitch seams, making French seams or stitched fells as planned.

6. *Placket Facings.*—(*a*) Continuous Facing: Cut a lengthwise strip of material twice the length of the placket and two inches wide. Place facing according to directions on p. 244.

(*b*) Continuous Facing: Cut a lengthwise strip of material twice the length of the placket and two inches wide. Proceed according to directions on p. 245.

(*c*) Invisible Closing: Cut a lengthwise strip of material twice the length of the placket and two and one-half inches wide. Follow directions given on p. 245.

7. *Placing Band.*—(*a*) Gather back of petticoat if fulness is to be placed in this way; (*b*) lay plait as fitted; or (*c*) have plain and smooth. Place front folded edge of band to the wrong side of the petticoat, fold directly on waist line and on gathers (if any) in back, letting center of band come to center of skirt, and seams meet marks on band, extension of placket facing to extension of band. Baste with small stitches, turn to right of skirt; lay folded edge of upper side of band to skirt, being sure that the ends of the bands meet. Baste carefully. Stitch all round band, directly on edge and again one-sixteenth inch inside first stitching if desired.

8. *Fastenings.*—Make one buttonhole in the band, and three or four as need be in the length of the placket facing, buttonholes with a bar at each end for strength. Sometimes snap fasteners are used on the placket facing, and button and buttonhole on the band. There can be little objection to the snap fasteners as there is to be had a non-rusting type, which is very flat. It is not to be advised for petticoats of thin materials.

9. *Dust Ruffles.*—(*a*) Join the strips for the dust ruffle, overhanding selvedges, or fell, on cut edges. Baste a hem three-eighth inch deep or, if preferred, use machine attachments. Gather this ruffle on the machine, first marking it off into quarters, and the skirt also, beginning at the center front, using colored thread with running stitches (Fig. 133).

(*b*) Receiving Tuck: This is one of the most satisfactory finishes for ruffles and flounces, making them seem to be a part of the material itself. Cut the petticoat off on the line which was turned and approved. Measure up from this edge twice the depth of the tuck, plus one-quarter-inch seam (one inch) and crease firmly, and baste (using card gauge for measuring). Then measure from the fold the depth of the tuck, set gauge on machine and stitch three-eighth-inch tuck. Remove bastings, fold tuck into place, crease flat; trace along lower edge of tuck to mark line to which gathers of dust ruffles are to be placed. Pin ruffle to petticoat, wrong sides together, keeping gathers on traced line, the divisions of the ruffle meeting the divisions of the skirt; avoid a seam of the ruffle in the center front. Baste ruffle to place; stitch; remove bastings. Lay edge of tuck down to gathers, baste to place and stitch (Fig. 133).

10. *Flounce.*—(*a*) Join the strips of material that have been cut for the flounce, overhanding edges if possible, because they are to pass through a tucker. The fells should be quite narrow, however. The flounce is to have a hem, one-inch deep finished, and three groups of one-eighth-inch tucks (five in each group), with space of three-eighth inch between the top of the hem and the lower edge of the first tuck; also between the groups of tucks, and one-eighth-inch space between the tucks. This will make a good problem in measuring and spacing before practice with tucker is begun. Lay, baste and stitch the hem. Follow the directions for tucking in laying the first tuck. Gather the flounce at the top, one-quarter inch from the edge, when the tucking is completed, first dividing the flounce into quarters and marking the same.

Placing Flounce: Fold the skirt through the center front; measure up from the bottom, the depth of the flounce to the gathering thread; place pins at intervals, and trace along the line of pins. Set flounce on skirt, being careful not to have join come in center front. Place marks of divisions on flounce to divisions on skirt, gathering thread on traced line; arrange gathers evenly, baste to

skirt, with small stitches. Trim plain material of beading away to one-quarter inch. Turn edge, leaving just enough of the material to take the machine stitching; crease. Pin and baste beading to place. Join with plain seam toward back of garment. Stitch both edges by machine. If the beading is intended for ribbon, run this through, using a wide ribbon runner, keeping the ribbon untwisted and smooth.

The problem which has just been explained was chosen because it embodied construction principles, which serve as the basis for making any type of petticoat. Many variations of the methods set forth might be made. Petticoats need not always have dust ruffles, nor need they always be made with the body of the petticoat extending to the foot. They are frequently cut the full length, less the depth of the flounce, setting this to the bottom of the skirt. This makes the petticoat less weighty, but necessitates an under-petticoat when worn with sheer dresses. Plain skirts of cambric and long-cloth, and those with flounces, are sometimes cut with the front gore of double thickness in order to make them shadowproof and avoid the necessity of an extra garment. Utility skirts of firm material trimmed with shaped or bias bands, or scalloped edges are attractive and durable.

Silk, satin or brilliantine, petticoats are made on the same principle as the one just described.

Seams should be flat in finish, either a stitched fell or a plain seam overcast, if the material does not fray badly. Taffeta can be pinked. A stitched fell makes a better finish for brilliantine, because of its wiry, fraying qualities.

Placket Facings.—The simple, continuous facing (bound) (Fig. 139), is the best to use on this type of petticoat. Face brilliantine with either sateen or silk of the same color. The material itself would be too clumsy.

Bands.—Silk alone does not wear long. The under side of the band can be made of sateen, percaline, or of Prussian binding, if one desires a very narrow band. In the latter, the edge of the outside silk would be turned in to meet the finished edge of the binding. Use sateen or percaline, with silk facing if desired, for the band of a brilliantine petticoat. The band is sometimes omitted on such petticoats and the waist line finished with a bias facing of silk or sateen.

Ruffles and Flounces.—Dust ruffles, gathered or plaited, are used on some petticoats, in addition to the outer flounce, which may be gathered, plaited or circular. Other petticoats are cut shorter and the flounce set into the bottom of the skirt under a tuck, or the flounce set to the bottom of the skirt with a plain seam on the right side, the seam finished by a bias band of material.

One very good flounce for silk petticoats, circular in effect, is made of bias strips of material cut three and one-half inches wide, joined, and one edge put through a ruffler, fulling it very slightly. Cut off one strip long enough to go round the edge of the skirt at desired depth for flounce, allow seam for joining, but keep ends open until flounce is finished. Turn in lower edge one-quarter inch and press. Lay this folded edge on the gathers of another strip; baste, cut off strip, and press lower edge. Continue until enough strips have been joined to give the desired depth. Stitch strips together and close ends of flounce with a French seam. The lower edge can be hemmed by machine. This gives considerable fulness at the foot, but gradually works down, which makes the petticoat comfortable for walking, but no bulk at the top of the flounce. Taffeta lends itself specially well to such treatment. If one keeps in mind the fashion of the skirts of outer-garments, it becomes an easy matter to adapt the petticoat to these requirements.

SUGGESTIVE QUESTIONS

1. Name three materials suitable for corset covers. What trimming would you suggest?
2. Calculate the quantity of material and the cost of the same, for a corset cover for yourself.
3. Show, by drawing, how to place a corset cover pattern on thirty-six-inch material for cutting out.
4. What seams would you use on a corset cover and petticoat?
5. Describe the use of a receiving tuck; the making and placing of a ruffle under the tucks.
6. Describe two different kinds of flounces that can be used on petticoats.

CHAPTER XIV

CONSTRUCTION OF UNDERGARMENTS: DRAWERS; NIGHT-DRESSES

DRAWERS

Suitable materials		*Suitable trimming for same*	
To be used for body of drawers; lighter material for ruffles	Batiste Berkeley cambric Linen Longcloth Nainsook Cotton crêpe	1. Self-trimming (a) Hems (b) Facings (c) Ruffles 2. Embroidered edging Embroidered insertion Entre-deux (a) Soft finished cambric (b) Nainsook (c) Swiss 3. Lace edging Lace insertion Lace embroidered (a) Valenciennes (French, German) (b) Cluny (c) Torchon (d) Irish (e) Filet 4. Tatting 5. Finishing braids	To suit material of garments

Of the materials listed above, any one of which is suitable for making drawers, Berkeley cambric and longcloth commend themselves for greater strength and durability than nainsook or crêpe. Nainsook, however, is delightfully comfortable, light in weight and easily laundered, while cotton crêpe is finding larger recognition, because it not only washes easily, but can be worn without ironing, a saving of time and labor.

A wide range of trimmings is to be found in the various laces, edgings, and even in the materials themselves. It remains only for the designer to make her own choice of fabric and decoration.

Designing Drawers.—The type and cut of the drawers may be left to individual choice; either closed or open drawers may be cut on straight or circular lines.

Straight Drawers.—These are cut so that the lower edges are straight, and the fulness at the waist is taken out in darts. In

closed drawers, a dart is sometimes taken out in the placket by folding off some material on each side of the opening.

Circular drawers have curved lower edges and are cut circular at the top so that all fulness is removed at the waist line. They are very comfortable to wear, because of lack of fulness at the top, yet permitting freedom of movement.

If the drawers are to be of a set of garments, the decoration should be in keeping with that of the remainder of the set. There is, however, no reason why the body of the drawers should not be made of one material, cambric or longcloth, with ruffles of another,

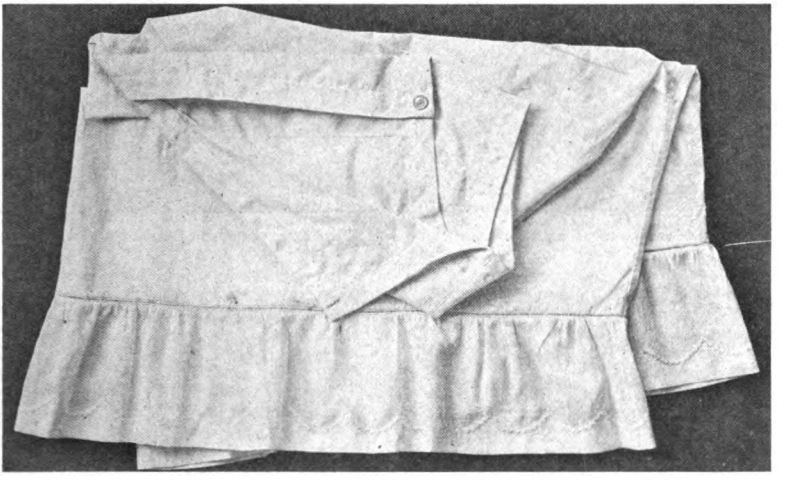

FIG. 166.—Drawers of nainsook; simple use of material for decoration; hem on ruffle shaped at top edge and featherstitched.

nainsook or fine lawn. Nainsook is preferable for this because of its softness. Fig. 166 shows simple use of the material for a ruffle, this having a hem shaped at the top which is edged with feather-stitching, and set into the drawers with entre-deux. The ruffle adds little expense to the garment, the embroidery cotton a trifle, the entre-deux more perhaps, and there is time to be expended on the featherstitching; how much, depends on the speed of the worker. In Fig. 167 is shown a more elaborate decoration, using lace and embroidered beading through which dainty colored ribbon is run. This garment is one of a set, the night-gown and skirt being shown in other illustrations. The material is all of good quality. The

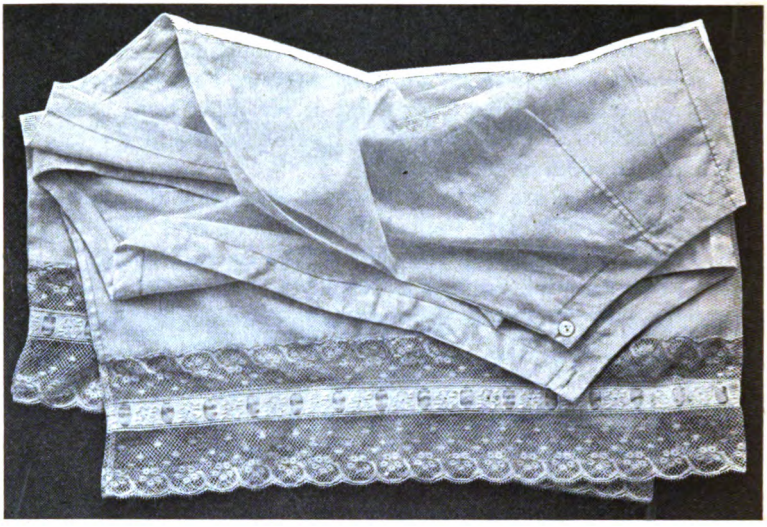

FIG. 167.—Drawers of nainsook with lace and embroidered beading used for decoration; part of a set of undergarments.

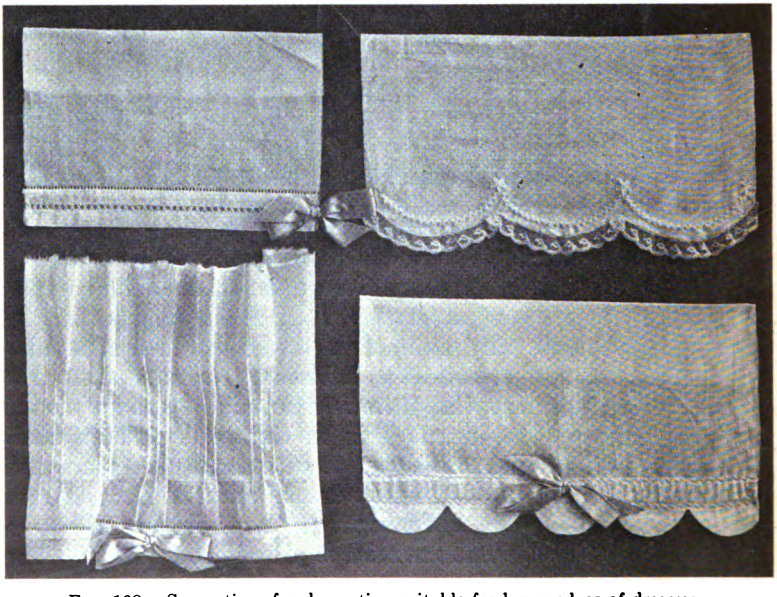

FIG. 168.—Suggestions for decoration suitable for lower edges of drawers.

lace, which is a very attractive pattern, of durable quality German Valenciennes, is set in by hand. Just here is illustrated what one needs to consider in planning undergarments of an elaborate type. Much as we desire them, before the work is undertaken, the amount of time and labor involved must be considered. If both can be afforded, then well and good. For frequent wear, however, the simpler decoration is to be commended, and with woman's wider participation in business and professional life simplicity in garments is being increasingly stressed. Suggestions for other types of trimmings which may be applied either as ruffles, or to plain edges, are shown in Fig. 168.

Quantity of Material and Cost.—The calculation of these enters into the problem of design, else design and garment may not fit into the scheme of one's expenditures. To calculate the quantity of material necessary, lay a drafted pattern on the table (if straight drawers), with the lower edge to edge of table; if circular drawers, place according to the grain of the material, the edge of the table representing the selvedge of the material. Measure from the lowest edge of the pattern to the highest point; double this quantity and add the amount necessary for ruffles. This can be ascertained by measuring the width of the leg at the lower edge, allowing one and one-third to one and one-half this amount for a ruffle, and twice this for both ruffles. Divide this amount by the width of the material to find the number of strips necessary, and multiply by the depth of the ruffle to find the amount. Facings for finishing edges and gores that may be necessary, if the material is not wide enough to cut the entire garment in one piece, may be taken from the pieces left from the cutting. Measure for the entre-deux. Allow one skein, at least, of embroidery cotton; D. M. C. crochet cotton, a hard twisted cotton, because more effective after laundering; then applying what has been learned in regard to prices and widths of material, go to work to calculate the cost. If it amounts to too much for the purse, change the design, or kind of materials, etc.

Making Drawers.—As a problem to explain the principles of making drawers, the type illustrated in Fig. 166 has been chosen because it embodies principles that can be applied to any type one may wish to make. These are straight, with the fulness taken out in darts and having one placket. They are to be cut from a commercial pattern.

PROBLEM.—Calculate the quantity of material necessary.

Cutting Drawers

1. Prepare material (p. 132).
2. Test pattern (p. 94).
3. Lay cut ends of material together, selvedges meeting. If tucks are to be used across the body of the drawers, extra material must be allowed, and these laid and stitched in the opposite ends of the cloth before cutting material by pattern, in order to avoid tucking both pieces for one side (see Tucking, p. 400).
4. Place pattern, lower edge to cut ends of material; pin to place.
5. Cut around edge of commercial pattern; allow for seams if using drafted pattern (p. 96).
6. Trace darts and lines for plaits; also seam lines.
7. Remove pattern and where tucking is not used, tack the two pieces of the garment together in the upper right hand corner, and leave the tacking until the trimming is applied to the lower edges, as one is less likely then to make two pieces for one side.

Sewing Process.—Place entre-deux at the lower edge of drawers considering the inside of the material as the two pieces lie together as the right side. Place the wrong side of the entre-deux to the wrong side of the material and stitch one quarter inch from the cord of the entre-deux. Open seam, crease sharply, and trim to less than one-quarter inch. Fold again and stitch just outside cord, making a French seam.

Seams.—Hemmed or stitched fells are used on drawers. Stitch and finish the seams of the legs (one-quarter inch finished). Baste center seam (leave until fitted, after which stitch and finish like other seams). Darts the same, turning them all toward the front.

Facing Open Drawers.—The upper part of open drawers is faced with bias strips of material cut one and one-quarter inches wide (see bias cutting, p. 391). Join strips. Place right side of strip to right side of drawers; baste one-quarter-inch seam and stitch. Open, crease firmly, and turn facing to wrong side, baste along seam edge. Turn in opposite edge one-quarter inch, baste, and hem to drawers.

Placket.—Cut the placket on line indicated for it in the pattern. It is sometimes the center of a dart. One or two plackets may be cut in closed drawers; if one is used, cut it from nine to eleven inches; if two, cut them from seven to nine inches.

Placket Facing.—Fit garment before applying facing. Use the continuous placket facing (1) described on pp. 244–245.

Fitting.—Try drawers on to see that the length, minus the

ruffles, is correct; also that the garment fits smoothly at the waist line. If too full, take out extra amount in darts.

Finish remaining seams and darts (see above).

Ruffle.—Join the strips for the ruffle by overhanding; if raw edges, use very narrow French seam, or hemmed fell. Decorate ruffle with hem, shaped and featherstitched (Fig. 166). Mark quarter divisions on ruffles and edge of drawers. Gather ruffles with double thread, four sections; stroke or pull gathers. Place seam of ruffle to seam of drawers at cord of entre-deaux, two right sides together, with other divisions meeting. Baste with small stitches, letting the gathers come close to the cord of the entre-deux. Stitch, remove basting, and trim edge of ruffle to less than one-eighth inch. Trim entre-deux to within three-eighth inch of cord, turn in one-eighth inch, and hem to stitching of first seam to ruffle, making a bound seam.

Waist Line.—Either a bias facing or a band may be used to finish drawers at the waist line.

Bias Facing.—Cut and join bias strips of material one and one-quarter inches wide. (See bias cutting, p. 391.) Place right side of facing to right side of drawers; baste one-quarter-inch seam; stitch, open and crease sharply; fold to wrong side, baste on seam edge; turn in opposite edge one-quarter inch; baste and stitch.

Band (One Placket).—Cut a lengthwise strip of material the waist measure, plus the width of the extension on the placket facing and two inches for turning in at the ends of the band, by two inches wide. Turn in the ends of the band and baste. Place the right side of the band to the wrong side of the garment, the end of the band to the end of the extension. Pin band to place, baste one-quarter inch seam and stitch. Turn in other edge of band and place folded edge directly on the first stitching; baste and stitch all around band, close to edge. When two plackets are used, the belt must be cut in two pieces, an allowance made in each end of each piece for turning back, and also on the front band for the facing extension. The front band will be longer than the back.

Fastening.—One four-holed button on the ends of the front band at each placket, with buttonhole barred at each end on the ends of the back band, are sufficient to fasten the garment. Tapes are sometimes used to fasten drawers about the waist.

NIGHT-DRESSES

Suitable materials	*Suitable trimmings for same*
Batiste	1. Embroidered scallops and eyelets
Berkeley cambric	2. Bias binding.. (1. White; 2. Stripes; 3. Colors)
Cotton crêpe.. (1. White; 2. Colored; 3. Figured)	3. Lace edging (1. Valenciennes (German, French); 2. Cluny; 3. Torchon; 4. Irish; 5. Filet)
Flannelette or Outing flannel (For winter wear)	Lace insertion (1. Valenciennes (German, French); 2. Cluny; 3. Torchon; 4. Irish; 5. Filet)
Linen (handkerchief)	Lace beading (1. Valenciennes (German, French); 2. Cluny; 3. Torchon; 4. Irish; 5. Filet)
Longcloth	4. Embroidery edging (1. Soft finished cambric; 2. Nainsook; 3. Swiss) — To suit material of gown
Nainsook	Embroidery insertion (1. Soft finished cambric; 2. Nainsook; 3. Swiss) — To suit material of gown
	Embroidery beading (1. Soft finished cambric; 2. Nainsook; 3. Swiss) — To suit material of gown
	Entre-deux — To suit material of gown

Night-dresses may be made of any of the materials suggested above, according to the taste of the wearer. For long service, choose longcloth or Berkeley cambric, but if comfort alone is to be thought of, nainsook, or batiste, is the softest and daintiest material of the cotton fabrics. Cotton crêpe is again to be recommended for its laundering quality, not requiring ironing. It does not wear perhaps as long as the longcloth, and cambric, but it is practical for other reasons, especially to the traveller or the girl at camp. The crêpes come in very attractive colors and dainty flowered patterns, requiring very simple trimming; in fact, none at all, except bands of the same, or a bit of lace, if one desires.

Outing flannel is used by many who desire greater warmth during the cold weather than they find in the other materials. The nap which makes it warmer also causes it to take fire very easily, so that care must be used in its wear, if one has occasion to move near an open grate, gas, candle light, or alcohol stove. It is easily laundered, need only be pressed off dry, or even worn without pressing, if folded carefully when taken from the line. It should have only the simplest trimming.

Designing Night-dress.—Two types of gown are worn, (1) the low neck, short sleeve, over-the-head gown, in more general use, perhaps, and (2) the high-necked, long-sleeved gown, opening in front. The low neck, short-sleeved dress, which may have sleeves (gathered or plain) set into the armhole, or kimono with body and sleeves in one, when of a set of undergarments, is finished at the neck and sleeves after the fashion of the remainder of the set. When made

as an odd garment, the decoration may be of any kind that pleases the fancy of the maker.

The high-neck dress may be made with a yoke, double in back, and single in front; cut so as to fasten around the neck, or open in square or V-line in the front as far as the bottom of the yoke.

In designing night-dresses, the material to be used must be kept in mind, so as not to plan a type of garment out of harmony with what the material would suggest. If attention is paid to the neck line, the length and shape of the sleeve and the simplest decoration adhered to, the effect may be far more pleasing than if much time and thought were given to planning elaborate trimmings, which involve care and time in preparation and in laundering.

Even the high-neck dress may be made very attractive, if one does not insist upon the double yoke, or any yoke at all, in fact. Three one-inch box plaits in the center back, stitched as far as a yoke, then left open to give fulness, and a "sacque" front, with a box plait and hem opening, a few tiny tucks or gathers, or a bit of stitchery on the front, with or without collar, and sleeves amply cut and loosely finished at the hand, will provide the warmth about the shoulders and neck, yet have an individual note that is lost in the stereotyped yoke with alternate rows of tucks and insertions.

In much the same fashion, by a bit of coarse featherstitching, or chain-stitching, on a non-yoke gown, can a flannelette gown be made attractive.

Quantity of Material and Trimmings.—The quantity of material for the body part of the dress may be calculated by measuring from the highest point for the shoulder to the floor in front, adding the desired depth of the hem and one-half to one yard for sleeves, according as they may be short or long. Two lengths of most materials will be sufficient, except perhaps flannelette, which is narrow, in which case three lengths should be provided, and less counted for sleeves. The "sacque front" night-dress would better have three lengths, except with forty- or forty-five-inch material, and nothing extra for sleeves, perhaps.

When the decoration (edging or lace) has been planned, the necessary amount of material for this can be calculated by measuring a drafted pattern, and making sufficient allowance for joins and turning corners. In Fig. 169 is shown a night-dress with simple treatment of the neck and sleeves. The neck is gathered and set

FIG. 169.—Night-dress of nainsook, with simple decoration of embroidered beading and lace edging. (Sleeves gathered at armhole and lower edge.)

FIG. 170.—Night-dress of fine nainsook with lace and embroidered beading as decoration. The garment is one of a set.

into beading; for detail see Fig. 148. Fig. 170 shows a more elaborate treatment.

Making Night-dress.—The type of gown chosen for this problem is a round neck, over-the-head gown, with short sleeves that are to be gathered into the armhole. The decoration is to be lace edge, set on the gown, lace edge, and ribbon beading between the two lace edges. For detail see Fig. 155. The lower edges of the sleeves are to be finished in the same way as the neck of the gown. No other decoration is to be used, except perhaps fine tucking, introduced in both front and back, below the neck line. A pattern developed from a drafted shirtwaist pattern is to be used.

Cutting Night-dress.—The shirtwaist pattern from which has been developed this night-gown pattern was tested and fitted; therefore little if any alteration should be necessary in this garment. Prepare material for cutting according to directions, p. 227. If tucks are to be used as decoration at the neck, these should be put in before cutting gown (see directions for corset cover, p. 265). Fold material through the center lengthwise, two selvedges meeting. Place front piece of pattern with its straight edge to the lengthwise fold, the broad end to the cut ends of the material. Lay the back piece on in the same way, with its broad end to the opposite cut end of the material; the material that is left after cutting dress will thus be in one piece, which may be of advantage in further cutting. Should the material not be wide enough to cut the entire width of the pieces, the material may be pieced as far as is necessary, using from the strip that was left from first cutting. Pin selvedges together, allowing just enough for an overhanded seam, or for a fell. Cut around pattern, allowing three-quarter-inch seams and a three-inch hem. Do not allow any at the neck. Trace seams. Cut sleeves from the material left from the first cutting, placing the sleeve pattern as directed for the grain of the material. Allow one-quarter-inch seams all around sleeve; cut and trace.

Basting Seams.—Baste seams with regard to the type to be used. Fells (hemmed or stitched) are best for the shoulder seam because they are flat, and either fells or French seams may be used on the underarm seam. Baste the seam of the sleeve.

Fitting Night-dress.—Try night-dress on to see that the shoulder seams, neck and armhole lines are good. While the dress is on, have the line at the lower edge turned, the length to be de-

termined by individual taste. Marking at the floor will in very thin materials allow enough for shrinkage. Let the material lie on the floor, the gown hanging straight from the shoulders. Put a line of pins from center front to center back, along the gown where it touches the floor. Remove, see that the line is good, fold gown through center front and back, edges even, and trace just below the pins. Measure from the traced line, the depth of the hem, plus one-quarter-inch seam; mark with pins, and trace; remove pins on tracing. Cut through both thicknesses of material.

To Finish Neck.—Stitch and finish the shoulder seam (fell). Rip the bastings from the underarm seam, so as to lay neck out as flat as possible on the table, unless one has a dress form, upon which the gown should be placed, to apply the lace. The finished line of the neck being marked by the edge of the material, the lace edging must be placed far enough below the edge of gown to allow the beading and lace to be placed above, the lace to end on a line with the edge of the material (Fig. 155). Pin to place, letting join come on shoulder. Join according to directions for joining lace, Fig. 157. Baste the lower edge of the insertion to the gown, holding it easy so it will not draw the material; hem this edge of the insertion to the right side of the gown. Gather the upper edge of the insertion (using a plain hemming stitch), to fit the neck of the dress; overhand beading to insertion, gather upper edge of beading as insertion was gathered. Overhand the lace edge to the beading. Then cut material of gown away one-sixteenth inch above lower edge of insertion and whip the raw edge down to edge of insertion. The lace should be applied to the sleeve in the same way, either on straight or curved edge. For detail of trimming see Fig. 155. The ribbon beading may be omitted or not, as fancy dictates.

Seams.—Stitch underarm seams and finish (fell or French seams).

Hem.—Lay hem; take fulness in hem out by fine gathers after edge is turned, or in tiny plaits; baste, and hem by hand or stitch by machine. If the latter, stitch on the wrong side, without thread in the needle. Turn and thread needle, stitching on the right side through the needle-pricks.

To Place Sleeve in Armhole.—Measure one inch from shoulder seam on the back of the garment; fold the armhole in half and at the point on the opposite side from the one-inch point place a pin.

The seam of the sleeve is put to this point. Then lay the shoulder seam and the underarm seam of the gown together and fold armhole in half. The fulness of the sleeve is gathered in between these points on the top of the armhole. Place the seam of the sleeve, right side of sleeve to right side of waist, at the point indicated for it; pin it to place, holding the night-gown toward you as far as the sleeve is to be without gathers. Then holding the sleeve towards you, gather the top of the sleeve between these points, and adjust the gathers, having sleeve slightly fuller on the top, each side the shoulder seam. Baste sleeve to armhole, using small stitches. Try on to see if fulness is adjusted well. Change if necessary. Trim seam to one-quarter inch.

Binding Sleeve.—Cut a bias strip of material long enough to go around the armhole and one inch wide. Beginning at underarm seam, baste the binding to the armhole, the right side of the binding to the outside of the armhole. Make bias join where ends of binding meet. Stitch on when stitching sleeve; turn edge of binding in and hem to the inside of armhole. Remove all bastings; fasten the ends. Sleeves are sometimes set into the armhole with entre-deux. In such cases use the method described in setting ruffle on lower edge of drawers. In the gown shown in Fig. 170 there is a band at the high waist line to confine the fulness. The line for this band was found by drawing a tape about the waist and placing pins, noting at the same time the measurement of the tap and distance between seams across the back. The neck and sleeve finish is elaborate, entailing a great deal of labor and time. The lace is a very good pattern and quality. Numerous other, and far simpler, methods of decoration might be applied to night-gowns. Any that are adaptable to corset covers could be used equally well on gowns. Fig. 163 shows a good suggestion for simple embroidery and scalloped edges.

OTHER TYPES OF NIGHT-GOWNS

Kimono Night-gown.—This is a comfortable kind of gown, requiring little time to make, but not as serviceable as the one with sleeves, unless made with a gusset, set into sleeve, and underarm seams. Fig. 171 shows such a gown of nainsook trimmed with Irish lace, the join of which has been well made. Crêpe admits of very dainty treatment in decoration. The crêpe gown shown in Fig. 172 is made of the kind of material with a fine crinkle. It is a kimono

gown. The gown (which has been laundered, and is shown unironed, as it was folded when taken from the line) shows an interesting mode of decoration. The neck is edged with lace beading and an edging of val lace (fish-eye pattern), which is durable. Just below the neck is a line of featherstitching; also at the edge of the sleeve, either side of a row of crochet buttons on the front. At the center front waist line, several rows of machine gathers hold the fulness in place. At the end of the gathers double rows of featherstitching carry across to the underarm seam. The gown is very dainty and attractive.

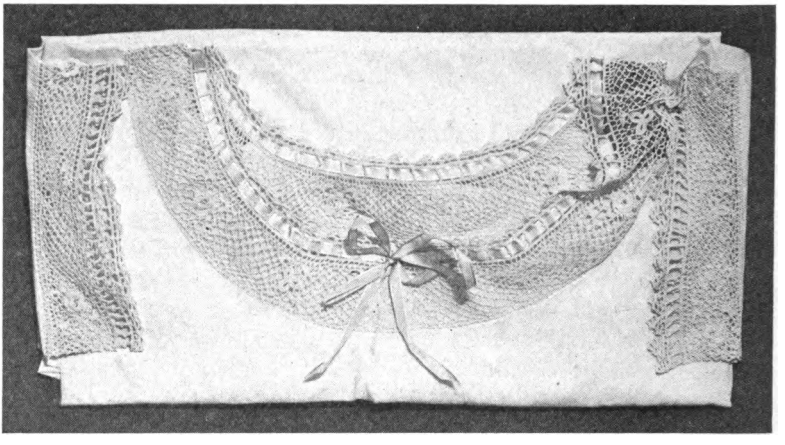

FIG. 171.—Kimono night-dress of nainsook, with Irish lace edge, showing join of lace on left shoulder.

Cutting Gown.—Straighten material. Fold through the center lengthwise; find center of length and fold across the material.

Placing Pattern.—Lay pattern on material so that the straight edge of the body pattern is on the lengthwise fold and the straight edge of the sleeve pattern is on the crosswise fold. If using drafted pattern, cut around outside of pattern, allowing seams. Cut on the upper line marked for the neck; trace the lower line; open crosswise fold and cut out neck one-half way round on the lower line. The low line is the front, the higher the back. Finish seams, neck and sleeves like other gowns. The neck and sleeves may be finished in any approved fashion.

High Neck with Yoke.—Difference in construction. Use the pattern, designed from a shirtwaist pattern, but mark off on the back piece the depth and shape of the yoke desired. Trace a yoke pattern from this. Do the same with the front.

Allowing Seams.—Cut two thicknesses for the back yoke, only one for the front; if the latter is to be tucked and lace-trimmed, this must be done before cutting out.

Cut back of gown (allowing fulness) less the depth of the yoke. Cut the front with the straight edge of the pattern along the selvedges, allowing one and one-quarter inches for box plait and hem.

Gather the top of the back of the gown except one inch from each end. Set gathers on to under side of yoke, wrong side of gown to right side of under yoke; baste. Place right side of upper yoke to right side of gown, edges even; baste. Stitch across lower edge of yoke; turn parts of yoke up to position, crease lower edges firmly, baste and stitch across once or twice. If three lengths of cloth have been allowed, or very wide material, turn box plaits on right side (as in corset cover); turn hem also to right side. Lay box plait over hem as far as depth of opening. Below this cut hem away within one-quarter inch of outer edge. Baste box plait to place and stitch both edges, the length of the gown. Stitch inside edge of hem and diagonally across opening.

Set front yoke into gown with entre-deux, finishing braid. At shoulder, seam front yoke and under thickness of back yoke together; turn in upper thickness of back yoke, baste, and stitch (one or two rows).

The neck of such a gown may be finished with a narrow ruffle, lace-edged, set into entre-deux, or the raw edges may be turned in under a bias fold of material or finishing braid, either of these stitched on both edges and a narrow lace overhanded to this. Other parts of the garment involve no new principles.

Sacque-front Gown.—When a high-neck gown without a yoke is desired, deep tucks (two on each side centre back) or three narrow box plaits are good decoration for the back, adding fulness as well. The front, buttoning from neck to feet, or opening like the gown described above, may have as decoration, rows of smocking, below the shoulder and at the neck, done with thread of delicate color, to which add tiny circular collar and cuffs of single thickness of ma-

terial, the edge rolled and whipped with the same thread that has been used for the smocking.

Flannelette gowns, at their best, cannot be made quite as attractive as others, because of the thickness of the material. They are warm and "comfy" in winter, and as some of us like to wear them, we should want them as attractive as possible.

In planning the gown, strive to avoid any unnecessary bulk or thickness. Used stitched fells and, where possible, single thickness of cloth on edges of collars and sleeves. Embroidered scallops in the color of a stripe, or edges rolled and whipped, will preclude the necessity of double collar and cuff. Seam the collar to the neck of

FIG. 172.—Kimono night-dress of cotton crêpe, showing a garment which has been laundered, washed, but not ironed.

the gown, and bind with a bias strip of some soft material, like nainsook. To draw fulness of sleeve in, gather two to three inches above the scalloped or rolled edge, two rows of gathers. Baste a band of nainsook to the under side, and sew over gathers, through nainsook, with outline or chain stitch in heavy thread like scallops.

Other types of undergarments, patterns for which can be de-

signed from drafted patterns, or cut from commercial patterns, may be made of the materials suggested, and put together by application of the same methods as before described.

COMBINATION GARMENTS

Chemise.—This garment may take the place of a corset cover and short under-petticoat. It always has some fulness at the waist line.

Envelope Chemise.—This takes the place of corset cover and drawers; is very comfortable, not difficult to make, and easy to launder. It is a garment cut on chemise lines, with an extension at the lower edge of the back, buttoning over on to the front, to form the leg of the drawers.

Combination corset cover and drawers, or corset cover and skirt, may be cut separately and joined at the waist line by plain band or ribbon beading, or cut on Princess lines, fitting the upper garment in to the figure.

Negligée.—Charming little dressing jackets, kimonos, boudoir caps, and what not, can be also made of inexpensive cotton materials and with very little time, if one is deft in the use of her needle and sewing machine.

SUGGESTIVE QUESTIONS

1. What materials and trimmings are suitable to use for making drawers and night-dresses?
2. Calculate the quantity necessary and the cost from your own pattern.
3. How would you plan a simple trimming for drawers other than lace or embroidery? Describe the process of making the trimming you choose.
4. Describe the placing of a yoke on the back of a night-dress.
5. How can you prevent a kimono night-dress from tearing under the arm?

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CHAPTER XV

CONSTRUCTION OF OUTER-GARMENTS: MIDDY BLOUSE; MANNISH SHIRT

The Middy Blouse.—Because of the comfort and the freedom of movement it insures, the middy blouse is to be recommended for wear at school, gymnasium, camp, and for both indoor and outdoor sports (Fig. 173).

Suitable materials	*Materials for decoration*
Drill	Linen (coarse), Flannel, Braid — Collars and Cuffs
Galatea	
Indian-head muslin	
Poplin	Embroidery cotton D. M. C. No. 16–25 or other makes — Arrowheads, Stars, Anchors, Emblems
Khaki cloth	
Linen	
Serge	
Flannel	Lace (for fastening front)
	Silk for tie

Drill (sometimes called twilled muslin), and Indian-head are the most desirable materials. They can both be had in thirty-six-inch widths, and for sixteen cents per yard. Drill is, of the two, perhaps, the more satisfactory; it does not soil quite as quickly as Indian-head, and does not turn yellow as quickly as galatea, which is narrower and costs as much. Indian-head launders more easily than either drill or galatea, and on the other hand soils more easily. Poplin is scarcely heavy enough, and linen crushes too easily. Khaki cloth makes an attractive blouse, but is rather stiff at first, and for this reason is very difficult to sew.

White is to be recommended because of its laundering qualities, and consequent freshness. Colored collars and cuffs of linen or flannel, stars and emblems, arrowheads, or laces and tie will give the correct touches of color. Khaki cloth with brown stitchings and tie, and leather lacing, makes an attractive middy for wear with a skirt of the same material. Serge is suitable for a winter school suit, where it is desirable to have the warmth of the woolen material. It is not, however, as cleanly as the cotton materials.

Serge is more wearable than flannel, which is usually too thick and wooly. Flannel is sometimes used for the upper collar on the

middy blouse, which gives it more the appearance of a seaman's middy. Personal taste may be consulted as to the use of braid on collar and cuffs, arrowheads, stars, anchors, eagles and chevrons

FIG. 173.—Middy blouse.

(Fig. 173). Emblems employing the monogram of the school, placed above the chevrons, instead of the eagle, are sometimes adopted by an entire class or school as a special mark for the middy blouse.

Either a commercial or drafted pattern may be used to construct the blouse. The instructions which follow are for the use of a commercial pattern. Those for drafted pattern are the same, except that there is no seam allowance on the pattern.

Read the directions for purchasing commercial patterns (p. 182). Take the bust measure around the fullest part of the bust, an easy measure. Purchase according to this measure a pattern of standard make, and the quantity of material for which the pattern calls, of the kind you have selected.

Reading Pattern.—Follow very carefully the directions given on p. 182, for the purchase, reading, and testing of commercial patterns. Take the length measure from the highest point of the shoulder at the neck to the point below the waist you desire the blouse to reach.

Cutting Blouse.—When the pattern has been tested, lay the pieces on the material, with regard to the grain. Pin to place. Cut out on the edge of the pattern; trace, but do not cut notches.

Marking Seams.—Mark all seams with tracing wheel.

Construction.—Certain parts of this garment may be placed before the garment is basted.

Pockets.—Either one of two types of pockets may be used:

1. (*a*) *Set-in-Pocket* (Fig. 174).—(*A*) mark the place indicated on the pattern for the pocket slit, with colored thread. Cut the pocket one inch wider than the marking, by ten inches long. *B* shows wrong side of *A*. (*C*) Lay the right side of the pocket to the right side of the blouse, the upper edge of pocket one inch above the line of colored basting. Mark the line for the slit through the pocket, with running stitches. (*D*) Place a row of stitching all round the marking for the slit, one-sixteenth inch from the running stitches. (*E*) Cut the slit and turn the pocket through to the wrong side of the blouse. (*F*) Baste closely all around the edge of the slit, letting the material of the pocket slip over enough to form a narrow piping. (*G*) Stitch close to the lower edge of the slit. (*H*) Fold the pocket in half, with all the edges even. (*I*) Stitch along the upper edge of the slit. (*J*) Stitch a seam at the side of the pocket. Overcast all raw edges. Finish the ends of the pocket with a bar-tack or arrow-head.

(*b*) *Set-in Pocket with Colored Facing.*—Cut a strip for facing one inch wider than space indicated for slit by two inches deep.

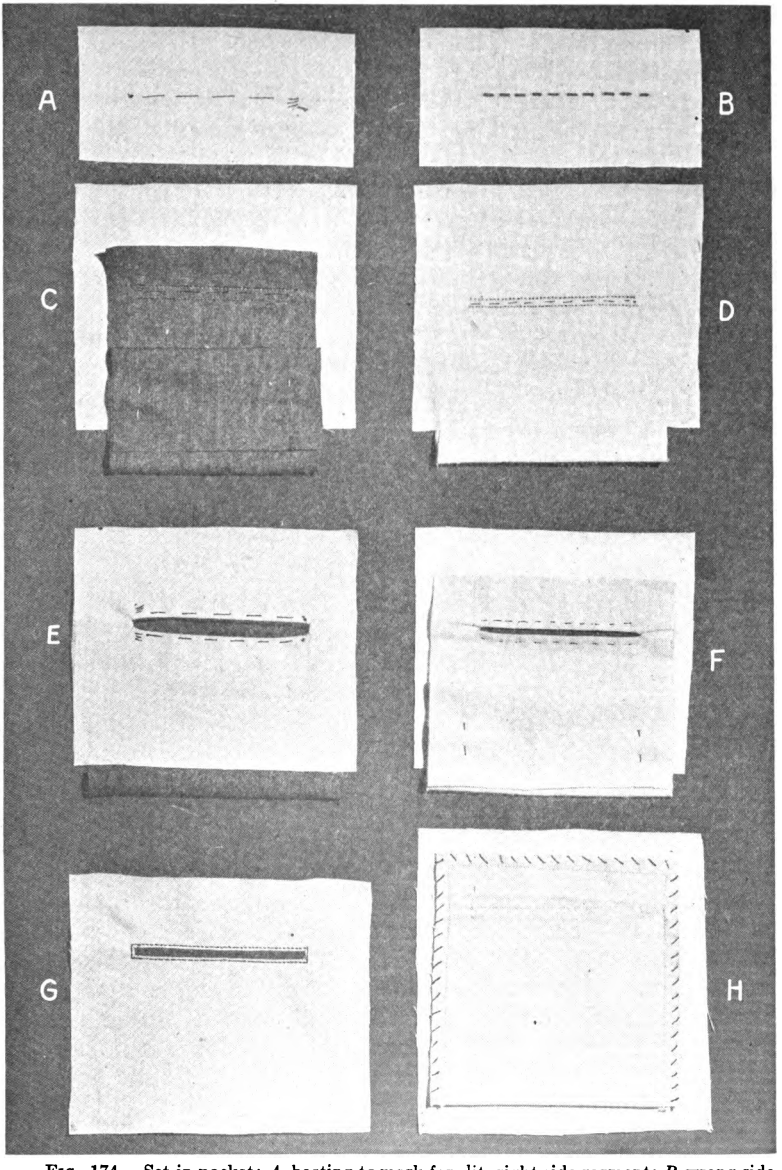

FIG. 174.—Set-in pocket; *A*, basting to mark for slit, right side garment; *B*, wrong side of *A*; *C*, pocket basted to right side of garment; *D*, wrong side *C*; *E*, pocket drawn through to wrong side garment, edge basted; *F*, wrong side *E*; *G*, pocket stitched, right side; *H*, completed pocket, wrong side.

Place the right side of facing to the right side of the blouse; baste to place through line marked for slit. Cut pocket as in 1*A*; place top edge of pocket (wrong side of pocket to wrong side of blouse) so that it just comes to the mark for the slit; baste to place. Stitch on both sides of mark for slit as in the other (Fig. 174); cut and turn facing through to wrong side, leaving piping of color to show on edge; stitch lower edge of slit; turn lower edge of facing in, baste to pocket and stitch. Proceed as with other pocket.

2. *Patch Pocket.*—(1) Before placing the pocket, stitch a piece of one-quarter-inch linen tape across the blouse on the line of the top of the pocket to strengthen the blouse where the stitching of the pocket ends. Cut by the pattern, turn the hem at the top, as indicated on the pattern, and turn the edges in one-quarter inch on the other three sides. Stitch across hem at top. Baste to place at the points indicated on the pattern. Stitch on the edge and again, one-quarter inch inside the first stitching to correspond with the other stitching on the blouse; also to cover the raw edge of the material.

Facing for Opening of Blouse.—Place the right side of the facing to the right side of the blouse, baste a narrow seam to within one-quarter inch of the end of the opening; lay the seam over the first finger of the left hand, hold it tight and sew with fine back-stitches from this one-quarter-inch point around the end of the opening and one-quarter inch above the end; continue basting to top of opening. Stitch seam by machine except where back-stitched. Remove bastings, turn facing to the wrong side, baste folded edge to hold it firm; then turn in raw edge of facing one-quarter inch, baste and stitch to place (Fig. 175).

Basting Seams.—Pin shoulder seams together, having neck and armhole lines meet, seams on right side of garment. Baste with small stitches. Baste box plaits or tuck at lower edge of sleeve, if either mode of finish is desired. Pin sleeve in armhole, having notches meet seam outside; gather with very small stitches between the notches; this will distribute the small necessary amount of fulness so equally that it will be lost when the seam is finished. Let the basting in armhole stop one and one-half inches from the shoulder seam, and fasten off. Begin at the same distance on the opposite side of the seam and baste to the end of the seam; then place a short basting across the space left vacant. When the

shoulder seam is stitched, this can be removed, it not being necessary then to remove the entire basting in the armhole. *Pin* the underarm and sleeve seam, having the armhole lines meet.

Fitting Blouse.—Slip blouse over head to see if it fits. It should set *easily* on the figure. If it seems too low in the neck, raise the shoulder seam and pin, following same line to armhole. Take sleeve in the same amount, and cut the armhole down at the underarm so that the sleeve will fit. If the neck is too small, let out

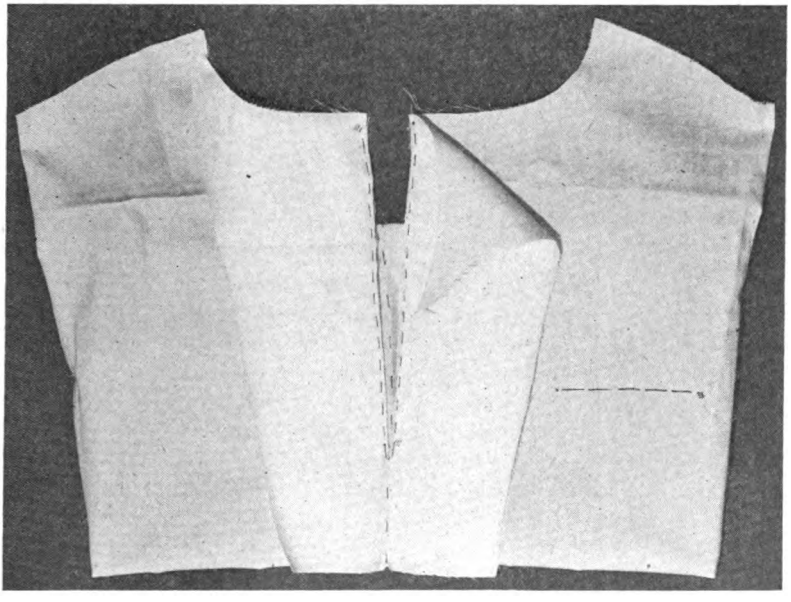

FIG. 175.—Placing facing at front of middy blouse.

shoulder seam and sleeve as well. If the bust is too small or the blouse too tight at the bottom, let out the underarm seam; if too loose, the reverse. Notice the length of sleeve also. Fit one side only. Remove blouse, open corresponding seams and make necessary changes.

When alterations are completed, and the blouse has been tried on again to test corrections, unpin the underarm seam, and rip the short basting from the shoulder seam. Stitch the shoulder seam as a fell, having the upper machine thread on the upper side of the

fell. Trim the front shoulder to one-quarter inch and the back shoulder to three-eighth inch. Baste fell and stitch it. Re-baste sleeve to blouse at shoulder, stitch sleeve and trim sleeve to one-quarter inch and waist three-eighth inch. Turn the blouse down on the sleeve, baste as a fell, and stitch.

Collar.—The collar facing, which is the upper side of the collar when finished, the part to which the decoration is applied, should be one-eighth inch larger on the sides and lower edges than the collar.

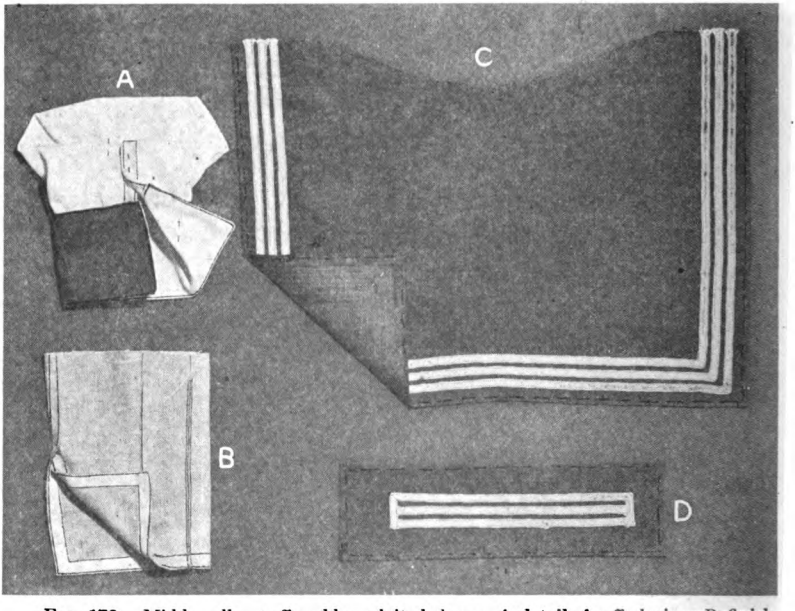

FIG. 176.—Middy collar, cuff and box plaited sleeve; *A*, detail of cuff placing; *B*, finish at wrist of a box plaited sleeve; *C*, *D*, braiding on collar and cuff.

If the collar is to be trimmed with braid and stars, this must be done before the facing and the collar are put together (Fig. 176*C*). Baste the braid to place, setting the outside edge of the first row far enough from the edge of the collar to allow for the seam, and a pleasing arrangement of spaces. Baste and stitch the upper edge of the braid, turning the corners with good miters which face in opposite directions. Place the right side of the facing to the right side of the collar, baste and stitch around the sides and lower edge, leaving neck open. Trim the corners of the seams diagonally, to

avoid unnecessary thickness in the seam, turn and baste closely on edge to keep it firm. Then pin the neck line of the facing to the neck line of blouse, having right side of the facing to the wrong side of the blouse, center of facing to center of neck and ends of neck and ends of facing meeting. Baste and stitch seam; clip seam on curve to let it spring. Turn in edge of collar along the machine stitching, baste, and hem by hand, being careful to finish the ends of collar where it joins facing, very neatly (Fig. 177).

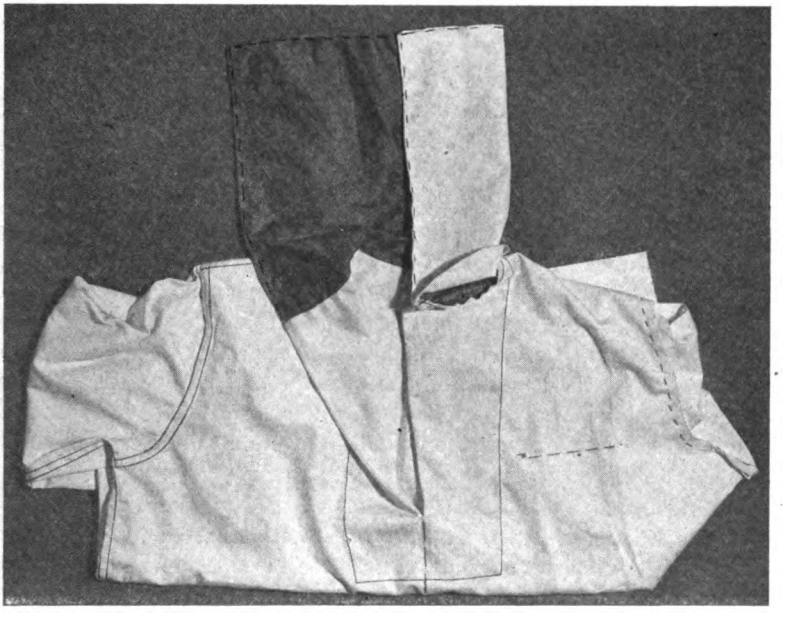

FIG. 177.—Placing collar on middy blouse.

Sleeves.—Box plaits are sometimes used to finish the sleeve at the hand. Baste according to markings on pattern, stitch to place, finishing stitching according to individual taste (Fig. 176). Baste underarm and sleeve seam and stitch in one. Trim front seam to one-quarter inch and back to three-eighth inch; turn back to front and stitch as a fell.

Plackets.—(*a*) *Hems.*—The extensions at the lower part of the sleeve may be turned back, on line with the seam of sleeve so as to lap; they may be hemmed, and buttons and buttonholes used for

fastening, the lower edge of the sleeve (Fig. 176*A-B*). (*b*) A very flat smooth finish can be made by first turning the upper side of the placket on a line with the upper side of the fell on the sleeve; the lower edge of the sleeve one-quarter inch (mitering the corners), and the under side of the placket one-eighth inch beyond the under edge of the fell; baste linen tape three-eighth inch wide to sleeve to form a facing; stitch on both edges, letting stitching cross at top of placket. Place buttonholes lengthwise of this placket and use small buttons, two or three, according to the length of the placket, Fig. 176*A* and *B*.

Cuffs.—Either method described for finishing the placket may be used for a sleeve finished with a cuff. If the collar has been trimmed with braid, the cuff should also have braid on it. The braid is usually placed as shown in Fig. 176*D*, but not so as to interfere with the buttonholes. Stitch the braid to the outer piece of the cuff, then place the two right sides of the cuff together, turning the edges which will be set on the sleeve back one-quarter inch and creasing them firmly. Baste through these turned edges when seaming the cuff; stitch, trim corners, turn and baste edges to hold them firm. Gather sleeve as indicated on pattern; slip the edge of the sleeve between the two turned edges of the cuff, adjust the gathers according to the marks, baste first the outer turned edge of cuff, then the inner. Make a continuous stitching around the edge of the cuff (Fig. 176*A*).

A false cuff is sometimes used on the box-plaited sleeve. It is made of a single lengthwise strip of material basted to the wrong side of the sleeve after the placket has been faced, stitched and turned to the right side and stitched again. This strip of material may be trimmed with braid the same as the cuff. One buttonhole lengthwise of the cuff should be sufficient because the cuff is narrow. The outer end of the buttonhole should be one-half inch from the end of the cuff and placed in the centre of the depth. There should be one buttonhole lengthwise of the placket and three-quarter inch above the cuff.

Short sleeves may be finished with a turn-back cuff, a plain cuff or the edge of the sleeve may be hemmed and the sleeve rolled when worn.

The lower edge of the blouse may be finished with a three-

quarter-inch hem or with a shaped band, the latter allowing for the shaping of the blouse in front, to suit the figure.

Eyelets, through which a lacer is run, may be worked on each side of the center front, above the end of the opening; or a tie, made by cutting diagonally through a square of silk and hemming the cut edges may be used.

The shield, cut double, is stitched together, turned and stitched again. Buttonholes should be worked in the shield at the place indicated on the pattern. Sew buttons to corresponding points on the waist.

Emblems for the sleeve may be worked on a piece of cloth, which is catch-stitched to the sleeve, before the seam is stitched up. A band of color is sometimes stitched to the opposite sleeve, before its seam is closed. Yokes are sometimes applied to the blouses. This should be done before putting the garment together.

Mannish Shirt.—This shirt for women, constructed on the lines of a man's shirt, makes an attractive garment for school or outing wear. It is suitable for more occasions than the middy blouse. Made up in silk it makes an attractive waist to wear with a linen or cloth suit (Fig. 178).

Selection of Materials.—Any of the shirting materials are very suitable for the construction of this shirt.

Suitable Materials.—Linen; Pongee; Habutai; Silk Broadcloth; Silk Duck; Madras; Percale; Flannel (unshrinkable).

Select a pattern which shows the most mannish effect. A shirt of very good style is one with a narrow yoke and a few gathers at each side of the center back. Buy the pattern according to the bust measure and the quantity of material which the pattern calls for of the kind and width you have chosen.

Cutting Shirt.—Place the pattern on the material, following the directions carefully. Pin to place. Cut around the outside of the pattern. It is better to test pattern in cambric.

Marking Seams.—Trace the seams and notches of cotton shirt. In silk, do *not* trace the seams unless using chalk board for tracing. Mark notches with a colored thread. Place pins in the perforations of the commercial pattern, lift the pattern, slip the pins through and mark with colored thread on both sides of the material where the pins are placed; or trace along the edge of a drafted pattern. Mark all pieces in the same way.

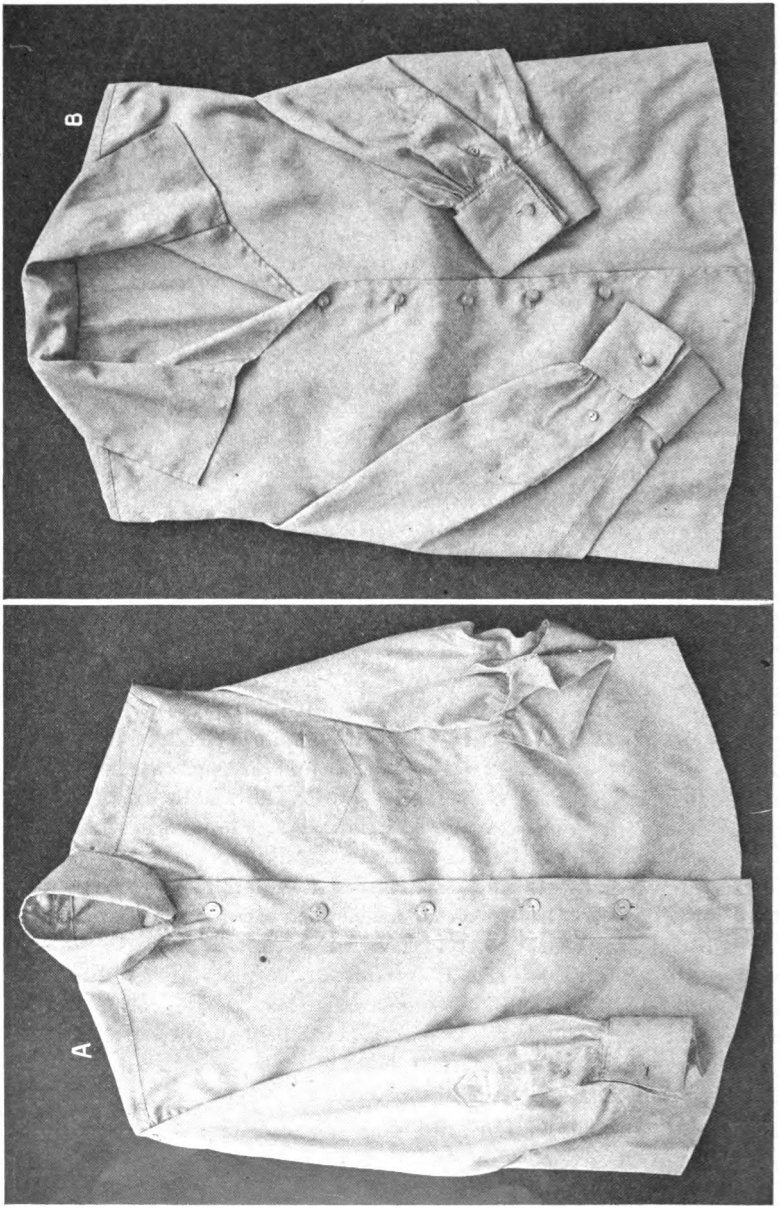

FIG. 178.—Silk shirts; *A*, mannish type, with high neck closing and high collar; *B*, same with open neck and collar.

Basting Shirt.—Baste box plait in front or hem if coat finish is desired (Fig. 182). If the back is plain, turn the bottom edge of the yoke in and baste it to place on the back. For a plain back, baste seam of front and back at shoulder, through yoke. If the back is to be gathered, the yoke will be in two pieces. Gather the back (two rows of gathers one-quarter inch apart), between the points indicated on the pattern. Turn the lower edge of the back yoke in, baste, and place on the upper row of gathers, distributing these in the spaces marked. Treat the under yoke in the same way, and baste to place. Turn under the front edges of both under and upper yokes, and baste to the front of waist at the seam line. Baste sleeve to place according to the directions for the middy blouse sleeve (p. 302). Baste the sleeve and underarm seam as one. Gather the sleeve at hand and baste one thickness of the cuff and collar band to place temporarily, for fitting. Place the waist band and baste.

Fitting Shirt.—Put the shirt on; pin the fronts together so that the box plait and hem lap in proper position, or two hems, if hem opening is used. Look it over carefully. If the neck is too low, rip outside yoke and take up the seam at shoulder; if too loose, fold box plait and hem deeper to reduce size. If the shoulder seam is raised much, cut armhole down at underarm seam to make it the correct size for sleeve; the sleeve will also be too full at top, in which case take in on seam; if necessary, re-cut at top to make correct shape. See that the sleeve is the correct length; notice also the position of the waist band and the distribution of gathers.

When the fitting is completed, remove the shirt and make necessary alterations. Slip it on again to see that it is correct. Change pattern to coincide with the corrections in the shirt.

Stitching Shirt.—Remove cuff and collar band, open underarm seam and stitch box plait one-quarter inch from each edge, the hem directly on the inner edge, and back and front yoke on the edge, also one-quarter inch above. Stitch sleeve at armhole on the basting, with upper stitch on top side of sleeve. Trim seam of sleeve to one-quarter inch and shirt to three-eighth inch. Turn edge of shirt in, baste, and stitch on edge.

Placket.—Place and stitch placket facings according to the directions for placket on p. 323. Stitch seam of sleeve and underarm seam in a continuous line. Finish as a fell one-quarter inch

wide, turning the underarm seam toward the front. Gather the lower part of sleeve between the points indicated on pattern. Use two rows of gathers one-quarter inch apart, the upper to be removed after the cuff is placed. Seam the two pieces of the cuff together, turning back both edges which are to be placed on the sleeve, one-quarter inch, before stitching. Trim corners diagonally. Turn cuff to the right side, baste the turned edges to keep them firm. Place the right side of cuff to sleeve, laying the turned edge on the gathers, distributing the same across cuff. Fold under lap of placket back on the cuff before basting to place. Place under edge of cuff and baste. Stitch all around cuff directly on the edge. Place a second

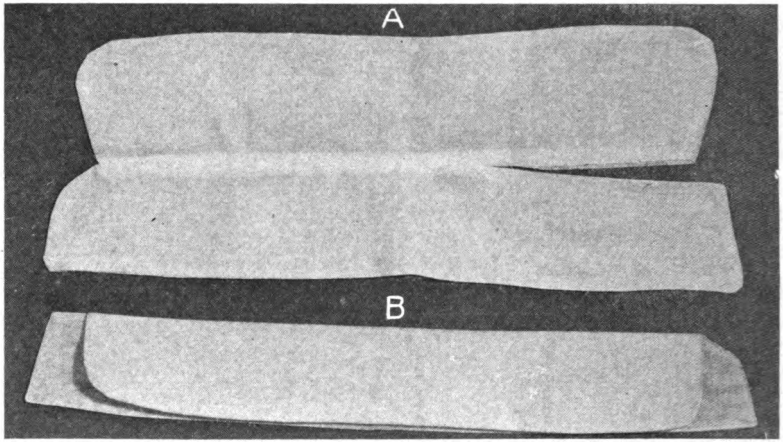

FIG. 179.—High turn-over collar for shirt; *A*, detail of making; *B*, completed collar.

row of stitching across cuff where it joins sleeve one-quarter inch below the first stitching.

Stitch the collar band, turning the lower edges back one-eighth inch before stitching seam. Turn to right side, turn and crease edges and place on neck of waist. Stitch once on the edge, all around band. Follow directions given for making collar bands, either type, on pp. 319–320.

Collar.—The turn-over collar, directions for making which are found on p. 320, is the type usually worn with this skirt, except when women follow the fashion of wearing an open neck, which insures greater freedom and comfort. This second method of finishing the neck is described on p. 328.

Buttonholes.—These are placed in the box plait and collar band in the same manner as the shirtwaist, p. 327, and the same type of buttonhole used. Four buttonholes are placed in the cuffs (Fig. 178), being careful to work them so that in each case the right side of the buttonhole is on the top part of the cuff.

Stitch the waist band to place and finish the bottom with a narrow hem.

SUGGESTIVE QUESTIONS

1. What materials are suitable for middy blouses? Which would you select?
2. Describe the process of making a set-in pocket?
3. Name the steps of procedure in making a middy blouse. In what way is the making of a mannish shirt similar?
4. Illustrate on cloth how to make an arrowhead.
5. What materials are suitable for mannish shirts?
6. What seams should be used on this garment?
7. Which type of cuff best suits it?
8. How do you set a plain back of a shirt into a yoke? A gathered back?

CHAPTER XVI

CONSTRUCTION OF OUTER-GARMENTS: TAILORED WAIST

Suitable Materials

Linen (heavy).	Khaki Cloth.
Madras.	Habutai Silk.
Poplin.	Silk Broadcloth.
Percale.	Silk Duck.
Indian Head Muslin.	Unshrinkable Flannel.

THE severity of the tailored waist has been greatly lightened through the adoption by many of the open neck line, with which the coat or hem opening is more frequently used. It is well to understand, however, the method of constructing a severely tailored garment, many principles of which may be applied in the making of other garments. For this purpose the construction of a plain tailored shirtwaist with sleeves having fulness at the top will be considered (Fig. 180). Use the pattern drafted and tested in the earlier pattern making work. Remember that it does not allow seams. Provide yourself with the necessary amount of the material you have chosen.

Then proceed as follows: Fold the material so that the cut ends are together (Fig. 181). Measure up from the cut ends, the length of the front piece of the pattern at its highest point. At this point cut through both thicknesses of cloth about four inches. Tear off the selvedges from this cut, to the ends of the cloth.

Box Plait and Hem.—Decide which piece of cloth will be the right-hand side of the waist when completed. On the edge from which selvedge has been torn fold the material toward the wrong side, the width you wish to have the box plait finished (Fig. 182*A*). If using plain materials, you need only consult your individual taste and the prevailing style, but if striped material is being used, consideration must be given to the balance of the stripes and the relation of the edge of the plait to the stripes in the body of the waist (Fig. 180). When you have made the first fold the desired width, then fold again (Fig. 182*B*), and one-quarter of an inch from the edge of this second fold, baste a tuck. Baste one-quarter inch from the opposite folded edge (Fig. 182*C*). On the edge of

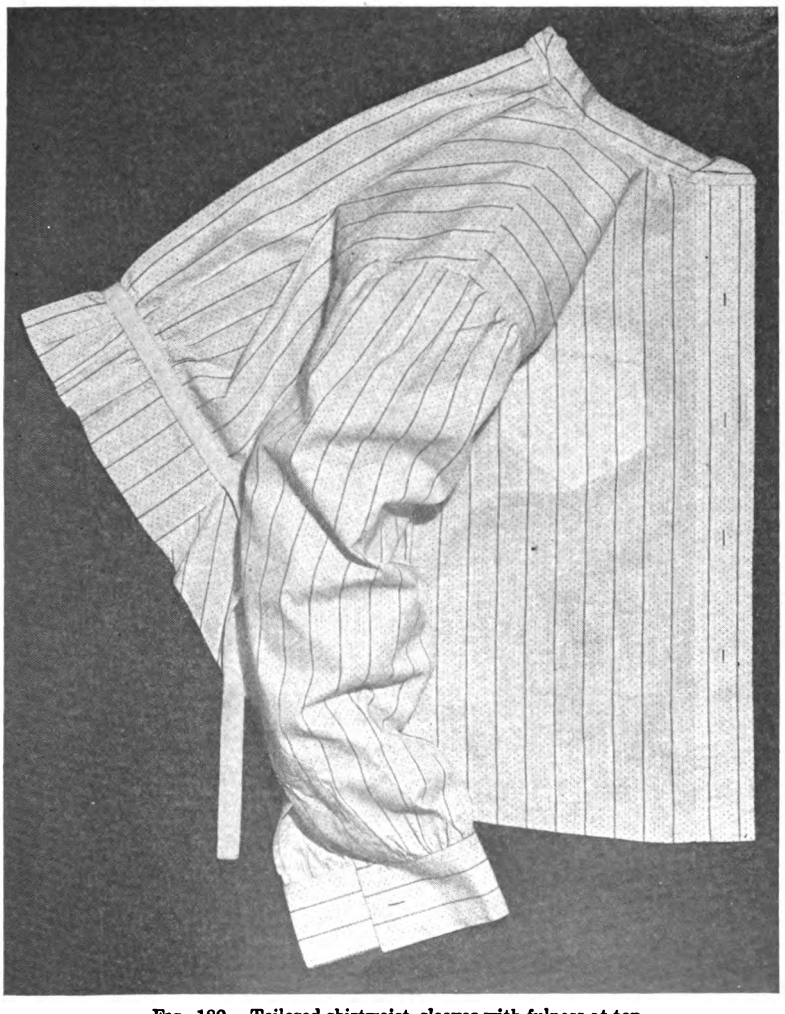

FIG. 180.—Tailored shirtwaist, sleeves with fulness at top.

the other end of cloth, lay and baste a hem one-eighth inch narrower than the box plait, being careful when using striped material to keep the succeeding stripes opposite those of the other piece of cloth.

Placing Pattern.—Fold both the box plait and hem through

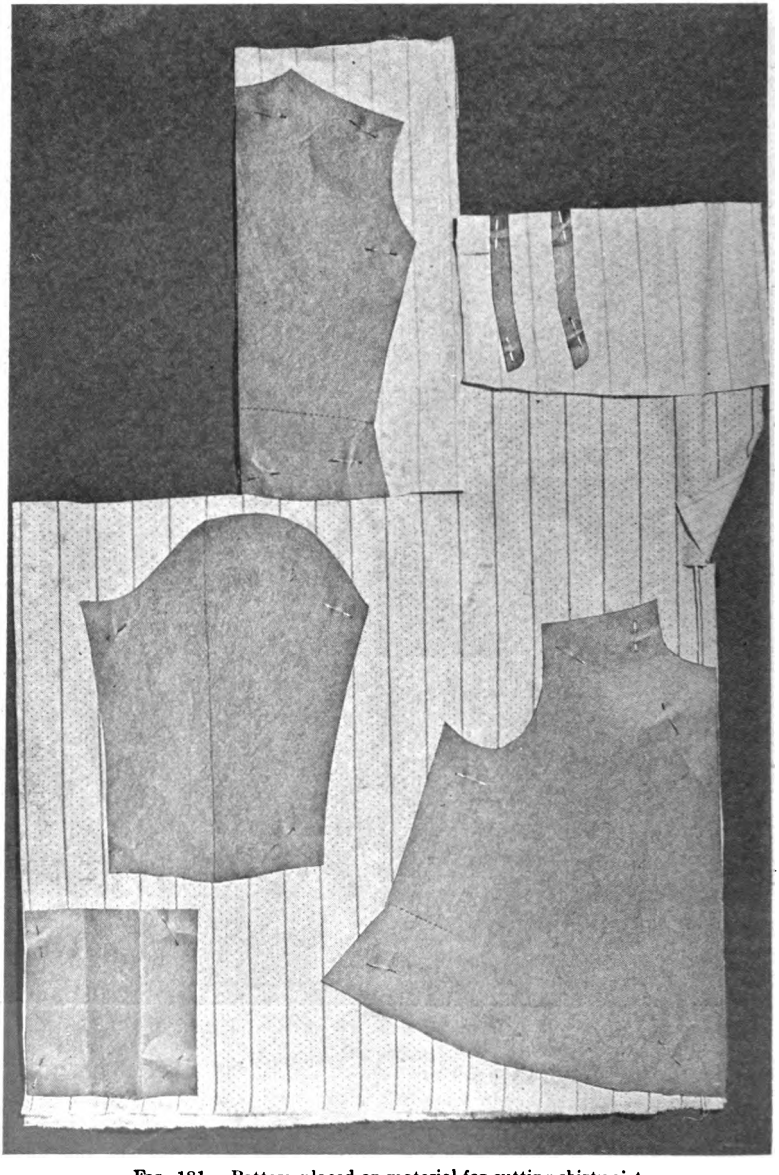

FIG. 181.—Pattern placed on material for cutting shirtwaist.

the center lengthwise and place the straight edge of front of pattern (center front) on this fold; sleeve pattern next with narrow end beside front of waist, and the crease through the length of pattern on a stripe or on lengthwise thread of the material; the cuff pattern so that the longer edge is on the selvedge; the collar band so that it will be lengthwise around the neck; the back should be placed so that the center back is on a lengthwise fold of the goods, or on a stripe. The pocket, if used, and facing should be placed so that the

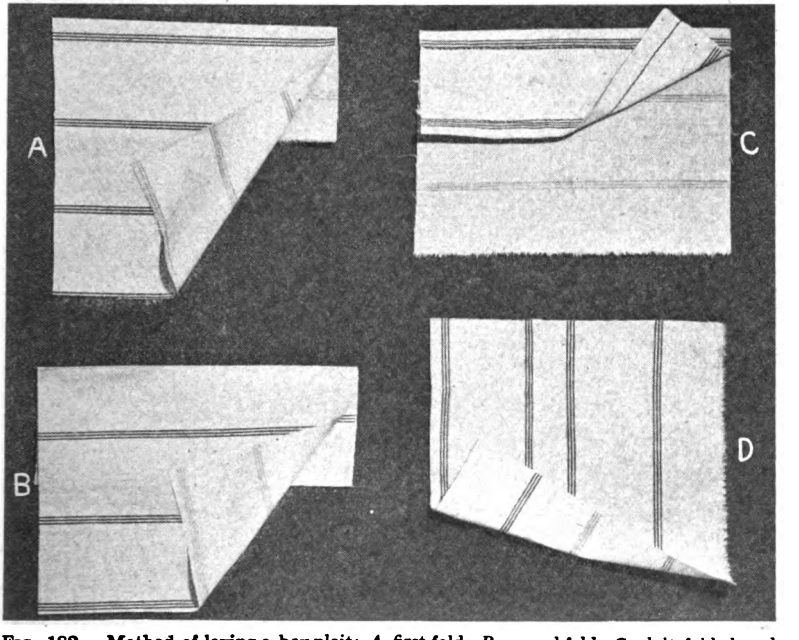

FIG. 182.—Method of laying a box plait; *A*, first fold; *B*, second fold; *C*, plait folded and stitched; *D*, plait opened out.

center line of each from top to point is on the lengthwise thread of the goods. Place the back after the other pieces except pocket and facing have been cut out (Fig. 181).

Proceed in the following manner:

1. *Pin* pattern to place; do not use many pins, and do not lift material from table while you pin.

2. Mark *seam allowance* beyond your pattern, one inch on underarm and shoulder and one-quarter inch at neck and armhole, one

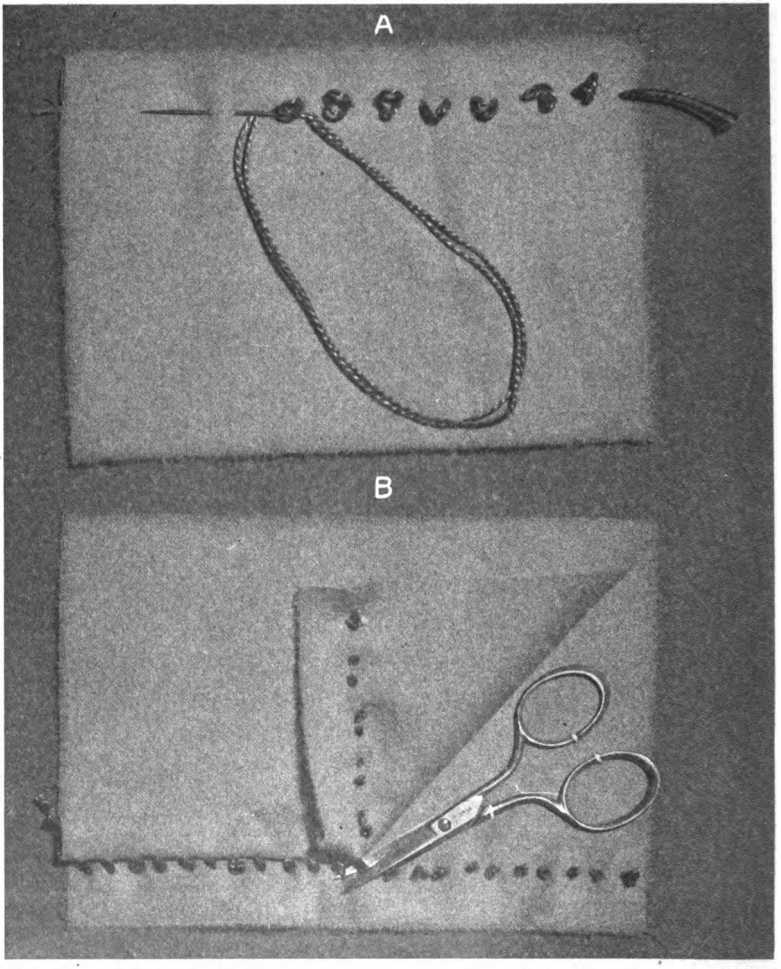

FIG. 183.—Tailor tacking or basting; *A*, making the stitches; *B*, cutting through the stitches to separate the two pieces of cloth.

inch on sleeve seams and one-quarter inch at top and bottom; one-quarter inch on cuffs, collar bands and pocket. Place tape measure at edge of pattern, letting end extend beyond edge, the width of seam. Use the tape measure as a guide until eye is trained to gauge distances.

3. Cut out on seam *allowance* markings.

4. Trace waist line first; then seams, along the edge of the pattern, beginning at waist line and tracing up and down. Trace armhole and neck lines. Let tracings cross at the ends of seams (Fig. 184). In tracing, run wheel straight ahead; do not see-saw back and forth. Use tailor basting (Fig. 183) or chalk-board for marking seams of silk or wool. Tailor basting can be done along edge of pattern before removing it. With the chalk-board the seams are traced, but the wheel must be raised carefully, else the material will be cut. *The chalk tracing board* is a sheet of heavy cardboard on which a thick layer of paste, made of carpenter's chalk mixed with water, is laid with a flat brush. When dry, the board is covered with heavy curtain net, glued to the under side. Silk seams can be traced lightly on this, the chalk coming off sufficiently to mark them. It is inadvisable to trace anything but seams of silk. Points for trimming should be marked by pins and threads. *Tailor basting, tacking or marking stitch*, is made in this way: Thread a needle with double cotton, using no knots; make even running stitches, leaving a loop in each stitch above the cloth. Sew right along the edge of pattern; fold pattern back when marking other lines. Separate the two edges of material and cut through the stitches, leaving a marking line at the same point on both pieces of cloth (Fig. 183).

5. Remove the pattern from the cloth.

Basting Waist Together.—Mark waist, neck and armhole lines and center shoulder points with colored thread. Begin with underarm seam, pinning waist lines together first, and keep traced lines together with pins at right angles to seams, and seams on right side of the waist. Baste from waist line up and down, using even basting, small stitches. Pin shoulder seams so that cross and center lines meet (Fig. 184). Baste, holding back shoulder toward you, so as to ease the extra fulness on the front; the back shoulder was made one-quarter inch longer than the front when the pattern was drafted. When the waist is basted, try it on, to be sure that the shoulder, underarm and neck lines are good.

Finishing Seams.—Stitch the seams, being sure to have the upper stitch of the machine on the top of the seam. Finish seams with a stitched fell one-quarter inch wide. Turn all seams toward the front of the waist when finishing. Finish bottom of waist with a narrow hem. Other finishings are sometimes used for the bottom of the waist when the figure is very stout: binding with bias lawn seam binding, overcasting the raw edge, or pinking it and stitch-

ing it by machine just above the pinking (Fig. 185). Still another method is to cut away the front of the waist below the waist line as far back as the underarm seam, then fit a circular peplum to the waist line. This removes all fulness where not needed.

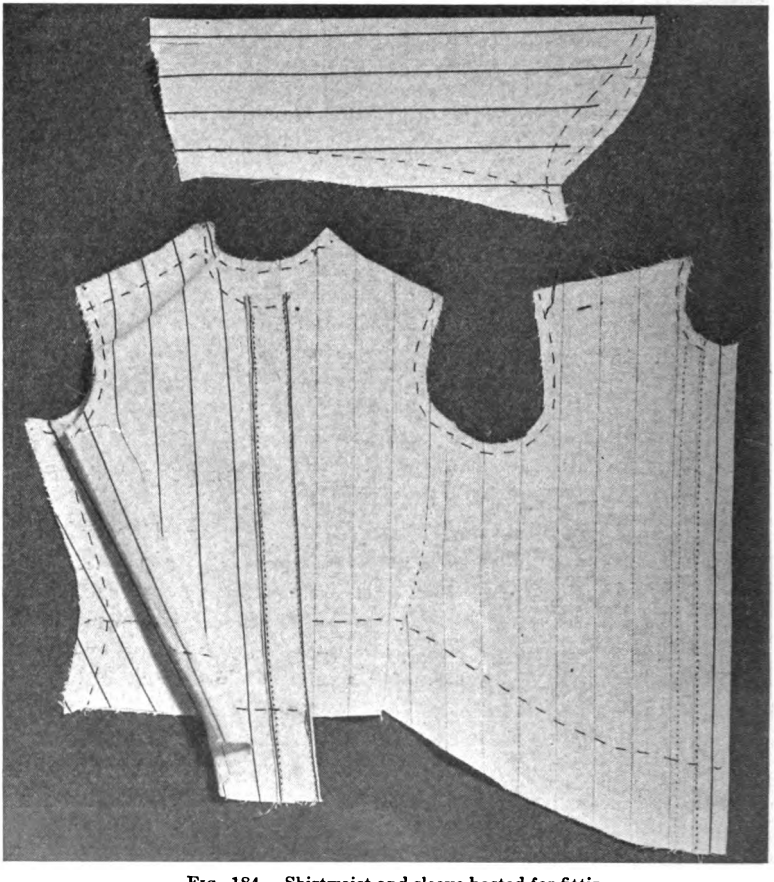

FIG. 184.—Shirtwaist and sleeve basted for fitting.

Waist Band.—Use a piece of non-elastic tape, four inches longer than the waist measure. Place it on the waist line as indicated when the pattern was tested. Gather through waist line, two rows as far apart as width of tape. Draw fulness to fit and stitch top and

bottom of tape as far as the underarm seam. Finish the ends of the tape with a blanket stitch. A hook and two eyes may be used to fasten the tape, setting the eyes so as to loosen the belt if desired. Ordinary twilled cotton tape is sometimes used for waist bands, but is not so satisfactory because not firm. The band may be made of the material of the waist if desired, using it double and turning the edges in and stitching the same (Fig. 185).

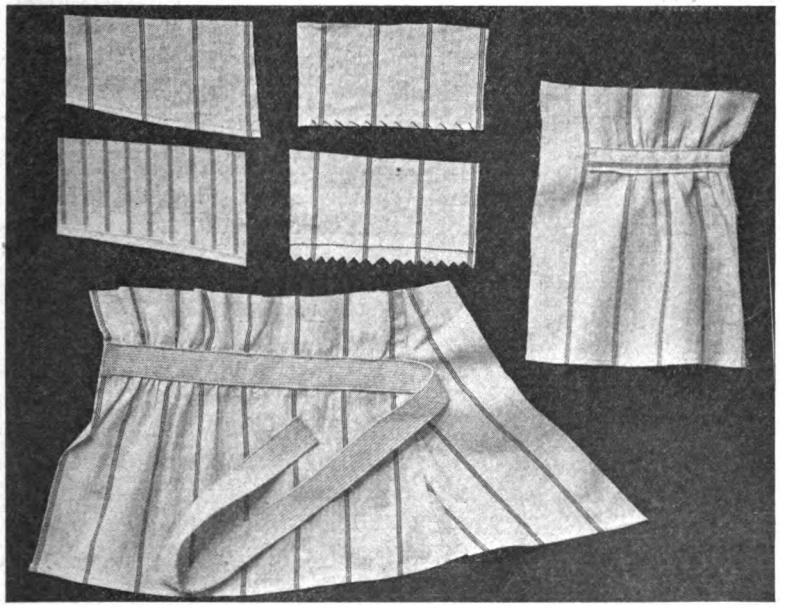

FIG. 185.—Finishes for lower edge of tailored waist Waist line finishing.

Collar Band.—One of three types of collar bands may be used.

1. *Straight Band.*—For some slender necks the straight band may fit very well. It can be made of a single lengthwise piece of cloth cut the neck size plus the width of the box plait and one-quarter-inch seams by one and one-quarter inches. Turn up the edge of the band one-quarter inch all around. Baste through center fold at top. Set the band down on the neck line on the right side of the waist. Let the ends of collar band come to edges of box plait and hem, pinning band to center of plait and center of hem. Then

fold band from these points to find center. Place at center back of waist. Baste to place and set the under folded edge of band directly on this and baste. One continuous stitching on the edge should finish this band. Care must be taken not to cut band too wide, else it will lie in folds under the collar. If too narrow, it is apt to slip out from under the collar.

2. *Curved Band.*—This band is in two pieces, cut from pattern. Turn the lower edges of band up one-quarter inch and crease. Put two right sides together and baste seam at top. Stitch and turn right side out. Place same as straight band (Fig. 186*E*).

3. *Curved Band with Protector.*—This band is cut with an extension at the bottom of the center back, which folds in such a way as to protect the neck from friction caused by collar button. The extension is cut only on the outside of band. Baste two pieces of the collar band together at the top, turning the lower edges of the band up and creasing before basting around top. Stitch top; turn right side out, and baste turned edge to hold it firm. Fold the extension piece under to place and slip the collar band over the neck of the waist, basting the under side of the band to place first, then the under side of the extension. Stitch across extension. Lay the outside of the band to place and let one continuous stitching finish it (Fig. 186*D*).

Collar.—With severely tailored waists are worn close-fitting collars of linen, stiffly starched, or made of the same material as the waist. The pattern for such is in two pieces, a stand, and the collar portion. The stand is cut lengthwise of the material around the neck, and enough longer than the collar to admit of lapping and fastening. The collar is cut crosswise around the neck to allow for stretching over the stand when drawn about the neck; it is cut long enough for the upper corners to meet or separate slightly. Cut two thicknesses of collar and stand sections. Place the right sides of the two collar sections, and also the two stand sections, together; stitch across the ends and lower edges as far as indicated on the pattern;

FIG. 186.—Cuffs and collar bands; making and placing; *A*, interlined cuff, wrong and right side; *B*, triple fold cuff, wrong and right side; *C*, French turn-back cuff; *D*, collar band with protector, pieces cut and pinned together; seam basted, extension folded back; band, right side; *E*, plain band, wrong and right side; *F*, band placed showing end of buttonhole on line with center of plait; *G*, cuff placed, arrow shows point one inch beyond center of cuff, placed to seam of sleeve; *H*, cuff to button over ; I, cuff for link fastening.

FIG. 187.—Placket facing for sleeve, continuous; bound and faced; *A*, sleeve folded, dart placed at top of opening; *B*, facing placed; *C*, facing cut and basted to under sleeve; *D*, edge of sleeve dropped, facing swung to place; *e*, finished facing.

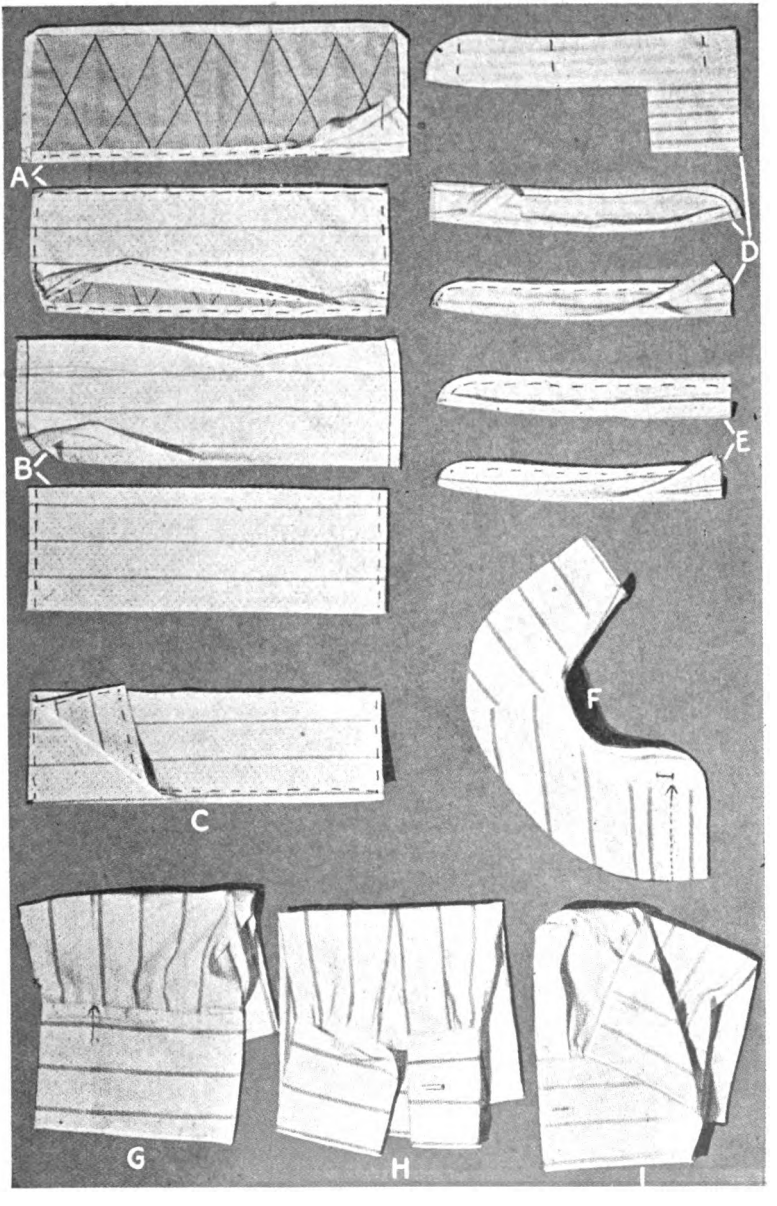

FIG. 186.—Cuffs and collar bands. (Descriptive matter on p. 320).

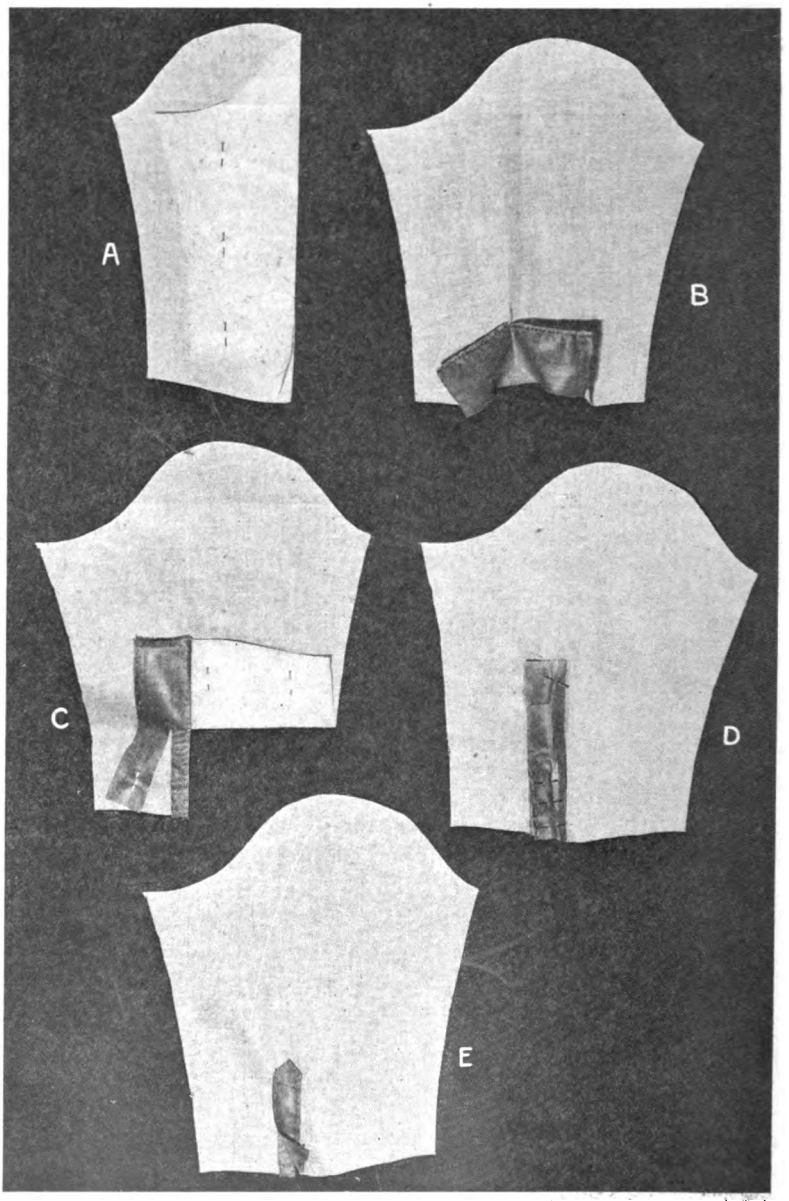

FIG. 187.—Placket facing for sleeve. (Descriptive matter on p. 320.)

trim corners diagonally; turn both sections to right side, and baste on turn. Then turn in the edges of the unstitched portion of the stand, and clip the edge of the collar between these, baste and stitch in continuous line, first around the collar, then the stand. Work buttonholes at points indicated on the pattern (Fig. 179*A* and *B*).

Sleeves.—*Placket Facings.*—Before stitching the sleeves, the placket must be faced. The opening should have been cut as far as indicated, on the pattern, four inches long and one inch from the fold on the under side of the sleeve. There are five separate steps to be followed in making the placket facing:

(*a*) Fold the sleeve lengthwise on a line with the placket opening. On the right side of the sleeve sew a dart one-eighth inch wide at the top of the placket opening and running off to nothing one-half inch above the opening. Use fine running stitches (Fig. 187*A*).

(*b*) Tear a lengthwise strip of material twice the length of the placket opening, by three inches wide. Hold the right side of facing to the wrong side of sleeve; sew to place all round the opening, taking a very narrow seam and using small running stitches (Fig. 187*B*).

(*c*) Lay the sleeve flat on the table right side up, fold the upper part of the sleeve back on itself on a line with the top of the placket opening. Fold the facing back on the *under* part of the sleeve. Baste folded edge to place. Measure from folded edge at bottom of facing seven-eighth inch (no more). Cut facing through at this point up as far as the top of the opening. Clip the facing in at this point one-eighth inch. Turn edge in and baste to sleeve (Fig. 187*C*).

(*d*) Drop top of sleeve to place and swing facing around so as to form the upper piece. Baste to place (Fig. 187*D*).

(*e*) Measure five and one-half inches from the bottom of sleeve and cut facing straight across at this point. Turn edges under so as to form a point. Cut away unnecessary cloth, baste to place. Stitch close to edge of facing and twice across at the top of the opening, one-eighth inch apart, yet so as to cover the raw edge of the material (Fig. 187*E*). Striped material sometimes makes a difficult problem on account of matching the stripes. If the problem proves too difficult one may cut away the upper part of the facing and apply a separate piece, the stripes of which will match those of the sleeve. The placket in one continuous piece is very satisfactory because the sleeve is smooth on the inside, and there is little bulk

of material from unnecessary seaming. The placket is strong, being all in one piece.

The seams of the sleeve are to be finished with a stitched fell. After making the first stitching, turn the fell from the upper side of the sleeve to the under. Examine your sleeve before turning the fell and notice that the upper sleeve being higher at the top than the lower, the seam would run short on the under if the fell were turned the reverse way. The seam would also be likely to draw at the elbow curve. In stitching the fell the second time, you will find it easier to handle if you turn your sleeve wrong side out and work from the inside. Place a row of gathers one-quarter inch from bottom edge of sleeve and a second row one-quarter inch above the first, except across the placket facing, and for a space of three-quarter inch on each side of the seam.

Cuffs.—Any one of three types of cuffs may be used on tailored shirt sleeves.

Interlined Cuff.—An interlining may be used for one or two reasons; to make a soft cuff firmer or when fashion decrees, stiff cuffs to serve as a stiffener. In the first case fine, soft materials may be used, such as lawn or cambric; in the second, coarsely woven materials, such as butcher's linen or heavy muslin. In either case the interlining should be shrunken before using. Cut the interlining one-quarter inch smaller than the cuffs on all sides. Place on wrong side of the under piece of the cuff and baste to place. Stitch back and forth across, so as to prevent blistering when laundered. Place the two right sides of cuff together; the edges that are to be placed on the gathers should be turned back one-quarter inch. Baste around the other three sides of the cuff and stitch, being careful not to catch the edge of the interlining in the stitching. Cut off the corners so as not to add to the thickness when completed. Turn cuff right side out and baste folded edge carefully, but do not stitch until after placing on sleeve (Fig. 186*A*).

Triple Fold Cuff.—The special advantage of this cuff is that there is no undue thickness to mar the smooth tailor finish. It is, moreover, neither difficult to make nor place. Take a lengthwise strip of cloth having a selvedge edge. Cut it three times the depth you wish the finished cuff to be and the necessary length. Add one-quarter inch seams to the length. Working from the selvedge edge, fold the two right sides together and divide into thirds, folding back

and forth. Stitch across the ends. Turn right side out and the cuff is ready to place (Fig. 186*B*).

French or Turn-back Cuff.—This is usually made of two pieces of cloth. Cut the length desired by twice the depth, plus one-quarter-inch seams. If cut of one piece, the same length by four times the depth. It is sometimes interlined, in which case the interlining should be cut the full size of the cuff as it cannot be cross-stitched to the under side. When the material is firm do not interline this cuff. There are at any rate four thicknesses of material to lie back on the wrist without the interlining, and in most cases it is unnecessary. Fold back edges one-quarter inch as in interlined cuff, baste and stitch seam. Turn to right side and it is ready to place (Fig. 186*C*).

Placing Cuff.—Find a point one inch beyond the center of the length of the cuff. Place this point to the seam of the sleeve, letting the shorter end of the cuff come to the under side of the sleeve. Set the folded edge of the cuff to the outer row of gathers, adjust fulness. If cuffs are to be used for links, turn the under side of the placket back on the sleeve and set both within the cuff. If the cuff is to button over, do not fold the under placket back (Fig. 186*H* and *I*). Be sure that both sides of placket measure the same length. Baste cuff to place. Let under fold of cuff, or in the triple fold cuff, let the selvedge lie directly on top of the gathers, on the under side of the sleeve; baste to place. Make a continuous stitching all around the cuff, close to the edge, and where it joins the sleeve add a second row of stitching one-quarter inch from the first, straight across the sleeve. Remove second row of gathers from sleeve (Fig. 186*G*).

Placing Sleeve in Armhole.—In order to place a sleeve correctly, it is necessary to have some point in the armhole at which to set the seam of the sleeve, as well as points between which to scatter the gathers. To ascertain these, first measure one inch back of the shoulder seam on the armhole; from this point fold the armhole in half; this locates the point at which to place the sleeve seam. Then fold the armhole again so that the underarm and shoulder seams meet; the gathers are to be distributed on the top of the armhole between the two points just found. Lay waist on table, slip sleeve in armhole; pin seam to mark, and sleeve as far as it is to be plain, holding waist towards you while pinning and basting the sleeve in place. Hold under part of sleeve easy so as not to draw waist

and make it fit badly. Gather sleeve at top on seam line, and again one-quarter inch below. Distribute gathers between the two points marked in the armhole, keeping most of fulness at top of shoulder, and baste to place, sewing directly on line of gathers. Try on to see if it sets properly. Before stitching sleeve in armhole take a piece of bias seam binding, open crease on one side, and baste to inside of sleeve, letting crease come directly upon

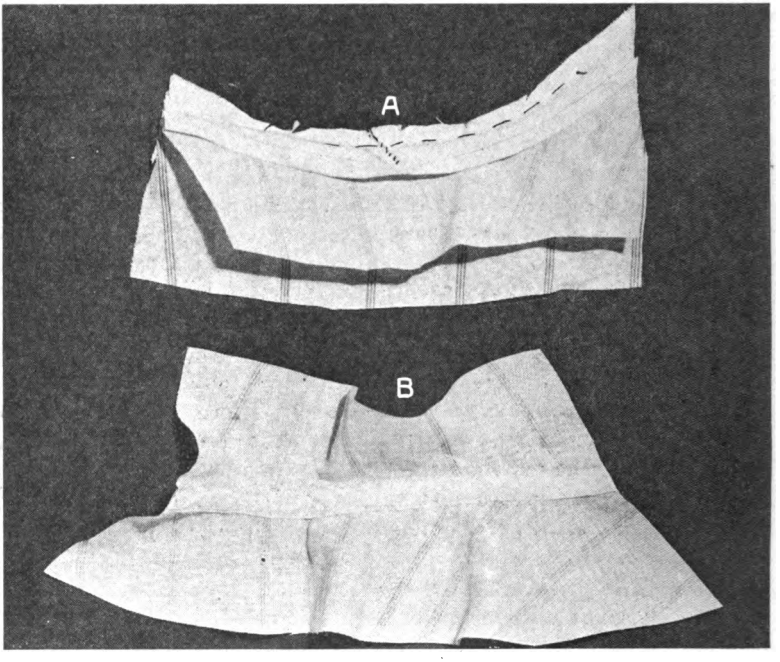

FIG. 188.—Binding sleeve; *A* basting binding, bias join; *B*, binding stitched, turned and basted ready for outside stitching.

line of gathers. Hold binding easy. Let ends meet at the underarm seam (Fig. 187*A*). *Make a bias join.* It is simpler to baste binding to within one inch of each end and then fold ends back so as to complete the circle; overhand turned edges. Stitch binding and sleeve at the same time, turn back flat on waist, baste carefully to place, one basting at edge of armhole, holding right side towards you; the second on edge of binding. Stitch at edge of armhole and on edge of binding (Fig. 188*B*).

Pocket.—See Middy Blouse pocket, p. 300.

Buttonholes, Eyelets, Buttons.—A general rule for placing buttonholes in shirtwaists: Buttonholes should be cut lengthwise of the material in shirtwaists, that is, lengthwise in the box plait, collar band, cuffs and placket facing and crosswise in coat openings. In spacing, the top buttonholes in the box plait should be as far from the collar band as the buttonholes are apart. Use from three to five, according to the length of the figure. Do not let the bottom button fall below the belt. Cut the buttonhole in the collar band so that the outside end of the buttonhole is on a line with the center of box plait (Fig. 186*F*), to prevent waist from spreading apart at the neck. The buttonhole in placket-facing holds sleeve together well if cut not more than three-quarter inch above cuff. Let the

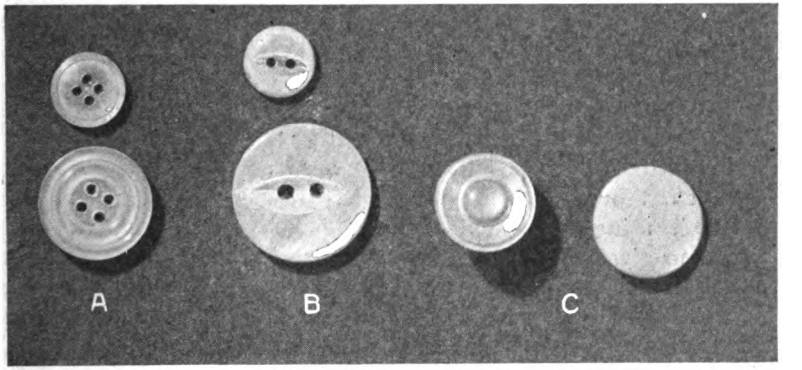

FIG. 189.—Shirtwaist buttons; *A*, four-hole; *B*, two-hole; *C*, buttons with shanks and fasteners.

outside end of buttonhole be one-half inch from the edge of the cuff and up one-third depth of cuff, measuring from lower edge. If studs are used, or buttons with shanks, work eyelets and use fasteners, so buttons may be removed before laundering. Either four-hole or the two-hole buttons may be used, or buttons with shanks and fasteners (Fig. 189), the size depending somewhat upon the width of the plait. Buttonholes on tailored waists should be barred at both ends to add to the tailored appearance.

Coat or Hem Opening.—This finish is made by folding back the material of the front to the wrong side without turning the edge in, and basting one-quarter inch from the edge of the fold.

This edge is later stitched in one with the collar. If the material of the waist is light weight, a strip of nainsook or batiste may be laid under the folds of the fronts to give them firmness and also strengthen it for the buttons and buttonholes (Fig. 178). Both sides of the front may be treated in the same way, the width of the hem depending upon the type of neck finish to be used.

Collar.—(1) For the open neck line the collar may consist of a double thickness of cloth, fitted to roll back from the neck. This may either be basted to the neck line, already cut in V-line, holding the under side of collar to the right side of waist (with center of each meeting), then stitched and finished with a narrow bias, or shaped facing, or one thickness of the collar may be sewed to the waist and the other thickness hemmed to the first sewing. (2) The neck of the waist may be left high, and a lengthwise double strip of material, twice the depth desired for the collar, cut the length of the neck, plus the seams. The ends of this strip should be stitched across, then the collar turned right side out, one thickness sewed to the neck of the waist, the other hemmed to the first stitching. The neck of the waist may then be opened as low as wished, or closed all the way up the front, leaving only a turn-over collar at neck.

Tucked or plaited waists may be designed directly in the material, using a fitted pattern. For such design follow the directions given on p. 154. The waists may be finished the same as plain tailored waists.

Waist with Gibson Plait.—This type of waist may also be designed in cloth from a fitted pattern. Proceed according to directions for designing waists, on p. 156. Finish the waist as other tailored waists are finished.

SUGGESTIVE QUESTIONS

1. How do you fold material to form a box plait in the front of a waist?
2. Describe the method of basting a shirtwaist for fitting.
3. How do you place the sleeve?
4. Show, by diagram, how to cut a collar band with neck protector.
5. Name the steps in the process of facing the placket of a sleeve.
6. State the rule for placing buttonholes in a shirtwaist.
7. In what way is the making of a Gibson waist different from a plain tucked waist?
8. How would you space the buttonholes in a tailored waist? What type of buttonhole should be used?

CHAPTER XVII

OUTER-GARMENTS: TAILORED SKIRTS

TAILORED SKIRT OF LINEN OR COTTON

Suitable Materials

Linen	Pique
Linen Crash	Poplin
Ramie Linen	Indian Head Muslin

PURCHASE the necessary quantity of material of the quality selected. It is not necessary to shrink heavy linens before making up. Cotton materials are more likely to shrink in washing.

Pattern for Skirt.—Use the pattern drafted to measure, designed from drafted pattern or a commercial pattern, for this skirt. Give careful heed to the placing of the pattern. Do not consider the first planning final nor the second, but try laying the pattern without pinning to the material until the most economical method has been found.

General rule for placing the pattern for cutting a gored skirt: this rule applies to material having no up or down: First, place the broad end of the largest gore to the cut ends of the material, having the straight edge of the gore, from the hip line down, parallel with the selvedge. Allow one and one-half inches on the lengthwise seams, one-half inch at the top and the desired hem at the bottom. Second, place the narrow end of another gore between the one just placed and the selvedge, providing for the same seam allowance. Fit the remaining gores as seems best. The center lines of panels are placed on the lengthwise thread of the goods (Fig. 190).

In Fig. 191*A* is shown the method of placing the pieces of a skirt pattern on material having no up and down, and in Fig. 191*B*, the method of placing the same on material of the same width, having an up and down. Note the greater amount necessary in the second. In Fig. 192 is shown the placing of a circular skirt pattern on material for cutting out.

Cutting.—When the pattern has been placed in the most economical way, mark the seam allowance lightly and occasionally with chalk, or with tape measure at seam allowance mark on edge

of pattern, move it along edge of pattern for a guide in cutting. Cut all around pattern on seam allowance marks.

Marking Seams.—After the skirt has been cut out, mark all seams, waist, hip and finishing lines, center front and back. Use a tracing wheel on cotton or linen where the tracings will hold, or use chalk-board, p. 317. Do not trace hip line all the way across cloth; one-quarter-inch marking inside seam line will suffice. If the material is too soft to hold tracings until basted, or a chalk-board is not available, mark with tailor basting or tacking, p. 317. When the seams have been traced, mark waist, hip and finishing line, center front and back, with colored thread, or tailor baste them.

Basting Skirt For Fitting.—Mark center front and back with colored thread. To baste a *panel front,* turn the edge of the panel

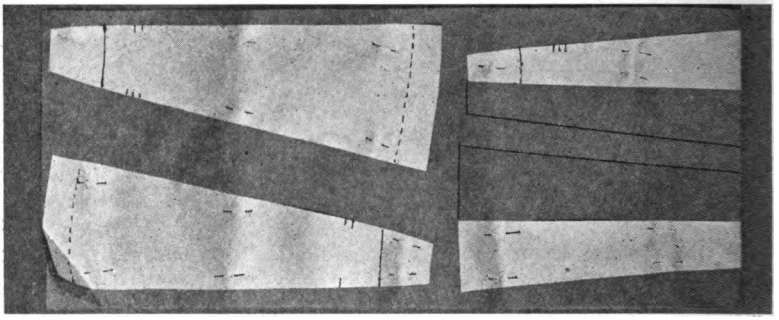

FIG. 190.—Six-gore skirt pattern placed on material for cutting out.

on the seam line, and baste one-quarter inch from the turned edge, to keep the line firm. Press edge of panel. Lay the side gore on the table and place the folded edge of the panel to the seam line of the gore, having waist, hip and finishing lines meet. Place pins at right angles to the seam and baste one-quarter inch from the edge (Fig. 193). Baste the left hand side to within twelve inches of the top to allow a placket opening. Baste a one-half inch lengthwise strip of material to the edge of the placket to keep it from stretching while fitting the skirt. To baste two gores together for a plain seam, lay the *straight* edge of one gore on the table with the *bias* edge of the other on top (Fig. 194); pin traced seam lines together, letting waist, hip and finishing lines meet. If both edges are *bias*, keep the *more* bias on top while you are pinning them together.

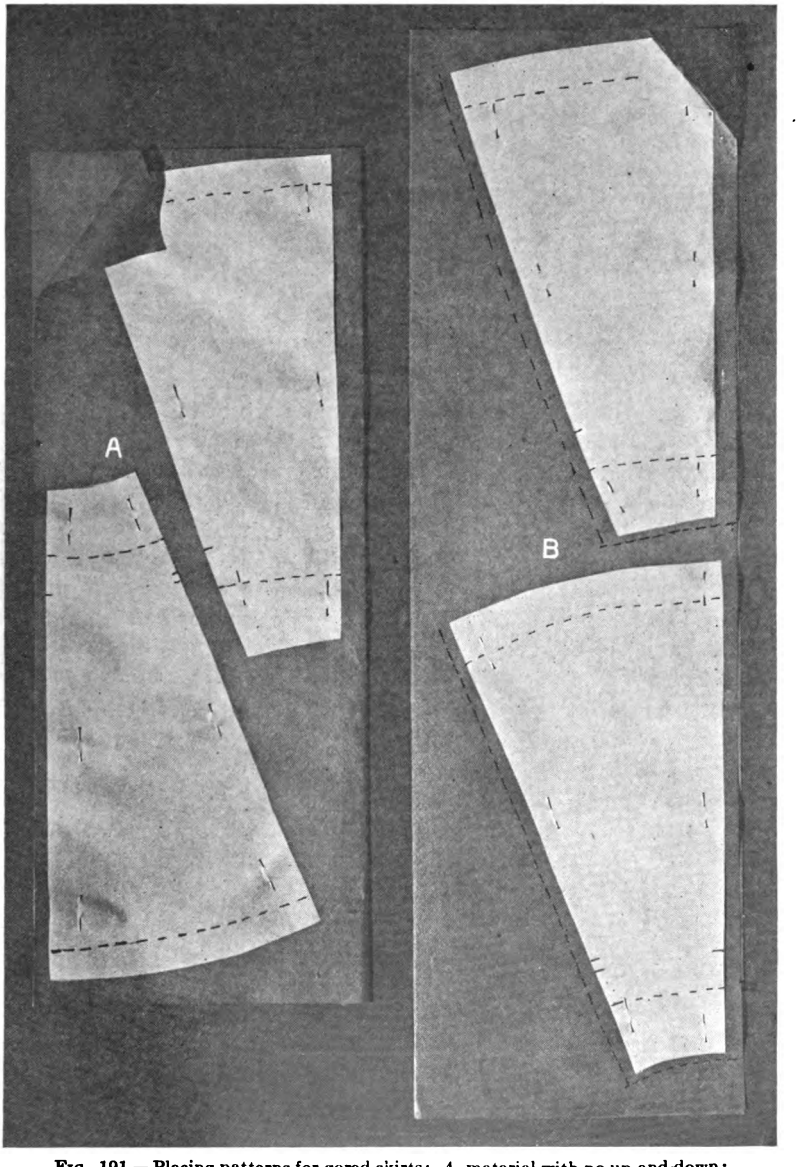

FIG. 191.—Placing patterns for gored skirts; *A*, material with no up and down; *B*, material with an up and down.

To Baste Tuck Opening.—Baste tuck on right hand side. Mark center front line on both pieces of front. Lay pieces together

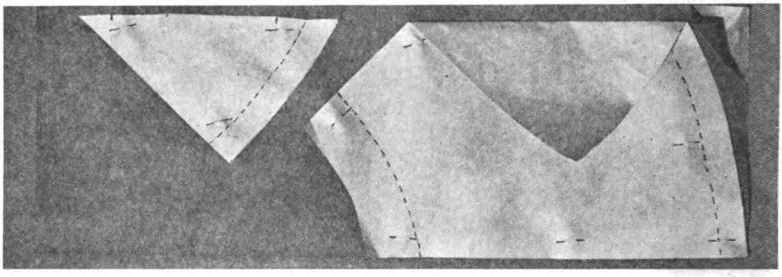

FIG. 192.—Circular skirt pattern placed on material for cutting out.

so that one center front line lies directly on top of the other, letting tuck extend as far beyond center front as you have planned to have the opening (Fig. 195). In basting seams use small stitches twelve inches down from the waist line so as to prevent stretching apart when fitting, and longer stitches on the rest of the seam. Turn the line at the bottom and pin the bottom of the skirt up to keep it clean and aid in seeing the trend of the seam lines. If the edge of the skirt is left to trail on the floor while the fitting is being done, it is not only in danger of becoming soiled, but as the skirt draws away, the seam lines do not appear as they will in the shorter finished length. Baste a bias strip of cambric or lawn, one-half inch wide, to the top of the skirt to keep it firm for stitching.

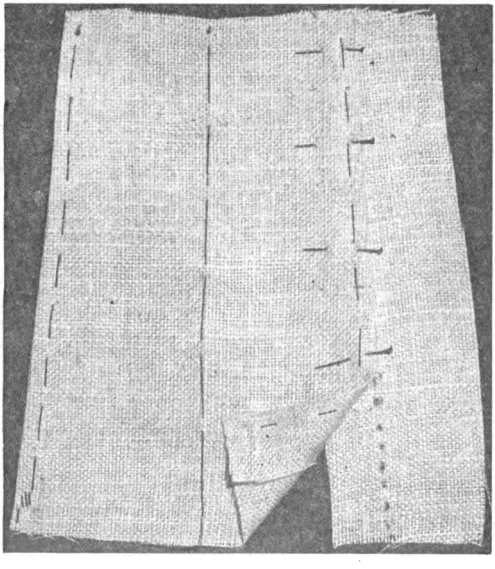

FIG. 193.—Pinning and basting panel to gore.

Fitting the Skirt.—Have a belt finished to the correct waist measure, with hooks and eyes sewed on. If fitting to the normal waist line, the belt may be one inch in width or less. When fitting for a high waist line, use a belt the height you wish the edge of the skirt above the normal waist line. Place belt on figure. When fitting a skirt with a normal waist line, pin the skirt right side out at the waist line to the lower edge of the belt.

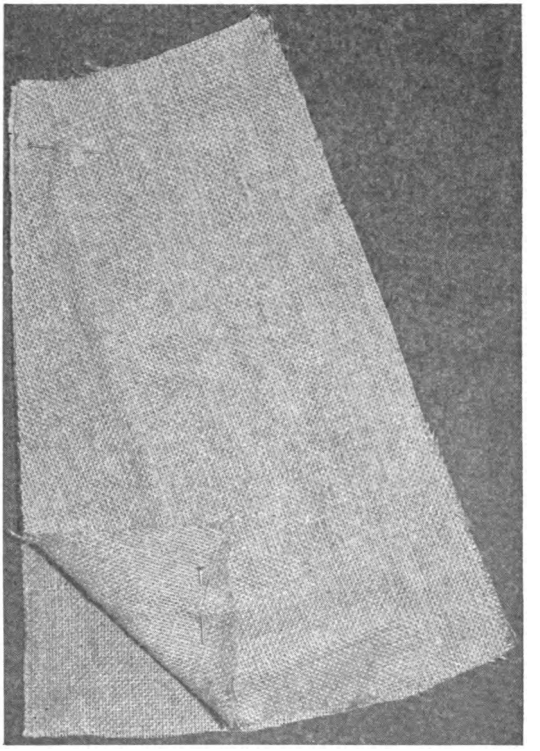

FIG. 194.—Pinning a straight and bias edge for basting.

Pin the skirt to the belt, right side out, at the center back, center front and at the hips. Then pin at the hip line center back, center front and hips. Before beginning to fit, look skirt over very carefully. See if the lines are good. The lengthwise seams of a gored skirt should fall at right angles to waist line. Keep this in mind while fitting, and also that the skirt should set easily about the figure, otherwise in stitching it will become too tight; neither will it allow for any additional shrinkage when laundered. Fitting should be done on the right hand side only, for the first time, unless there is a great difference between the two sides of the figure. Notice very particularly the hip seam on all gored skirts. If there is a tendency to swing forward or back, correct the line, taking from the bias edge

of the gore nearest the front what is necessary or adding to it, whichever the need may be. Do not change the *straight* edge of the side gore. If the skirt pushes out in front, it may need to be lifted in the center back or to have some taken from the bias edge of the side gore next front. Sometimes you may find that the grain of the material on the first side gore at the hip runs down toward the back. Correct this by lifting the bias edge on the straight edge of the next gore until the grain of the material is brought into good position. Discard the original hip line on this gore. If you are satisfied that the lines of the seams are good, look at the hip line. This should be parallel to the floor. If it is not, change it by placing a line of pins around the figure. If the skirt is simply loose all over, it may be stitched inside the bastings on all seams, or *vice versa*. If it fits well at the hips and is loose at the waist, take the seams in where needed. It is sometimes necessary to take more off one seam than the other in order to keep the lines good. In fitting, be careful to place the pins so as to indicate good strong lines.

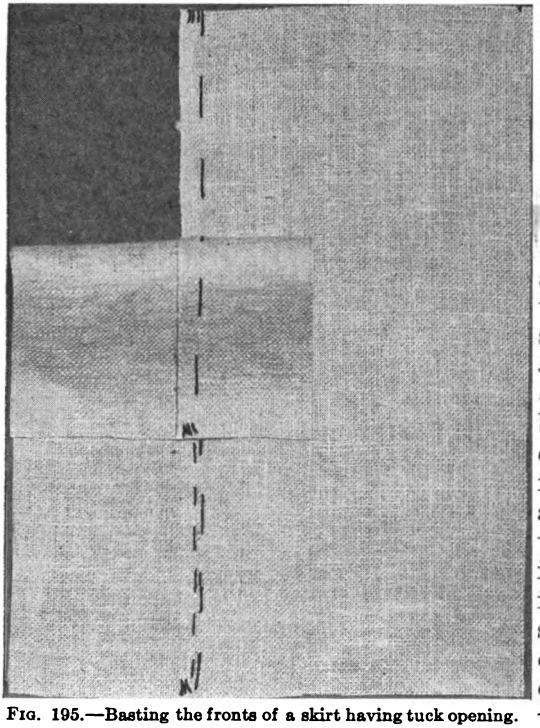

FIG. 195.—Basting the fronts of a skirt having tuck opening.

Making Alterations.—Remove the skirt. Trace all alterations along the line of the seams. Open seams and trace the corresponding seams, and re-baste. Mark all changes in hip, waist or finishing lines with a new thread. Try the skirt on again to see that the

alterations have carried out well. Unless there is a marked difference in the two sides of the figure, no further fitting should be necessary.

Plackets.—Before stitching the seams of the skirt, the facings and stays should be basted to the placket openings. Three plackets will be described, any one of which may serve in turn to illustrate the principle of finishing the opening of the skirt you are making. Plackets usually fasten from right to left.

1. *Placket Opening on Seam Having Two Bias Edges (Hip or Center Back Seam).*—First mark the folded edge of the upper side of the placket, right hand side, and the line which this touches on the under side of the placket, left hand side, with a colored thread. Cut two pieces of five-eighth-inch linen tape the length of the placket opening and a strip of lawn or nainsook (which has been shrunk) the length of the placket and twice its width. Open the folded edge of the upper side of the placket and turn wrong side out. Take one strip of the tape and place one-quarter inch to the left of the colored thread, marking edge of fold; baste to place and stitch. This serves as a stay to sew hooks on when placket is finished. Baste strip of cambric to wrong side of placket so that the edge comes to the turn of the placket. Fold edge of placket on colored thread and baste one-eighth inch from edge. Stitch as far from edge as outside stitching of seam. Sew snap fasteners or hooks to tape one inch apart, and turn cambric facing over, edge one-quarter inch; hem to place. On the wrong side of the extension baste the second strip of tape far enough to the right of the thread, marking edge of placket to sew snap fasteners or eyes in correct position to meet opposite snaps or hooks. Stitch tape on both edges. Overcast or bind edge of extension with cambric or bias binding (Fig. 196).

2. *Placket in a Tuck Opening.*—Before stitching the tuck in place, mark the edge on which it turns with a colored thread; then open the tuck, turn to wrong side, and place a piece of linen tape, five-eighth inch wide, one-half to three-quarter inch to the left of the thread marking the edge of the tuck; baste and stitch on both edges. Fold tuck again and baste to place; stitch same width as below the placket opening. Sew hooks or snap fasteners on one inch apart. The extension should have a piece of five-eighth-inch linen tape basted far enough to the right of the marking of placket, so that when the eyes are placed the skirt will hook together properly. Baste

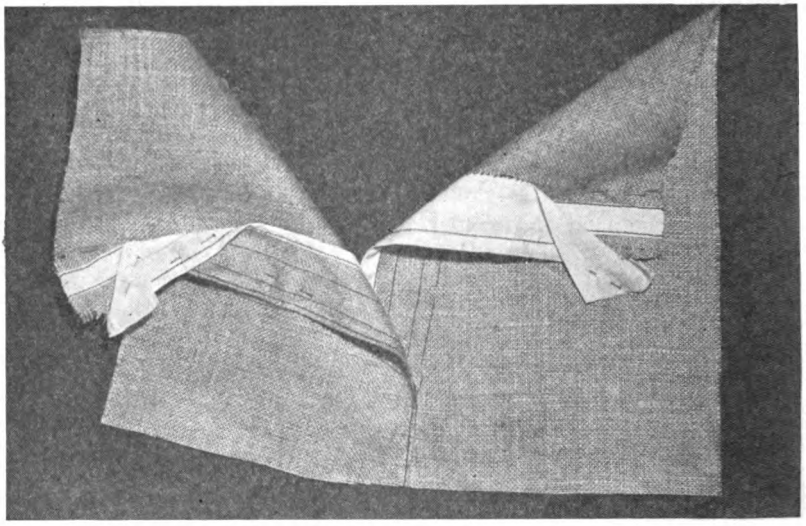

FIG. 196.—Placket facing on bias seam.

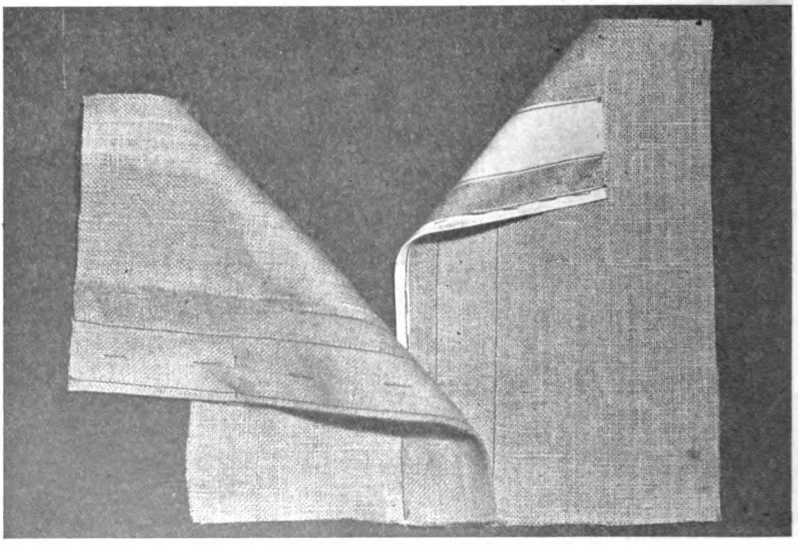

FIG. 197.—Placket facing in tuck opening.

tape to place and stitch both edges. Sew eyes on to meet hooks. The placket must close smoothly and evenly. Press before stitching. If the tuck should be on the bias, it must also be faced with a straight strip of lawn, nainsook, or batiste (Fig. 197).

3. *Buttons and Buttonholes.*—The buttonhole side must be reinforced to provide for the strain in fastening the skirt. Place a lengthwise strip of cambric or muslin, the width of the tuck on the inside of the tuck. Baste to place. Cut and work the buttonholes

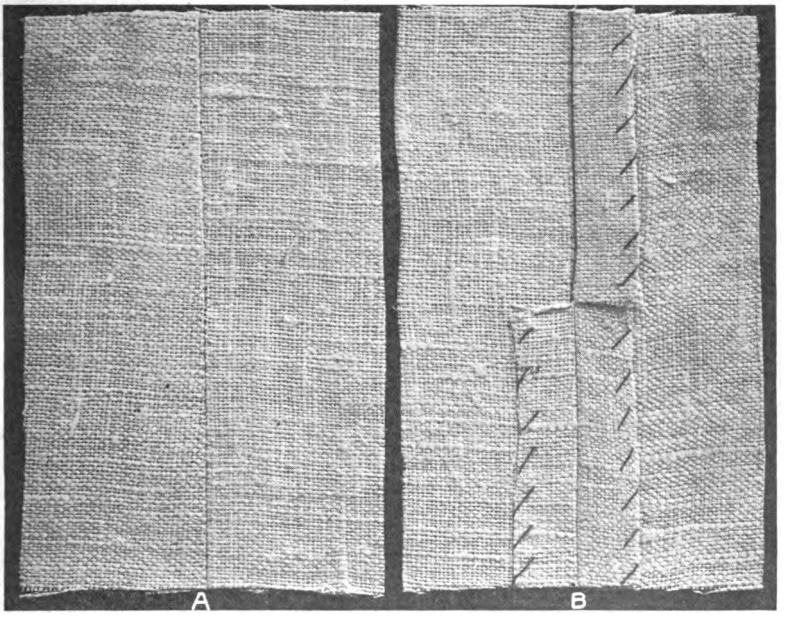

FIG. 198.—Plain seam, overcast single, and together; *A*, right side; *B*, wrong side.

through the three thicknesses of material. The buttonholes may be either worked or bound. Two- or four-hole, or shank, buttons are used, the size depending on width of tuck and individual taste. It is better to use a button with a shank which can be slipped through an eyelet and fastened with one of the metal catches specially made for the purpose. These are easily removed for the purpose of laundering the skirt. In any case, stay the extension with a piece of linen tape through which you either work the eyelets or sew the buttons. The edge of the extension, if selvedge, remains unfinished.

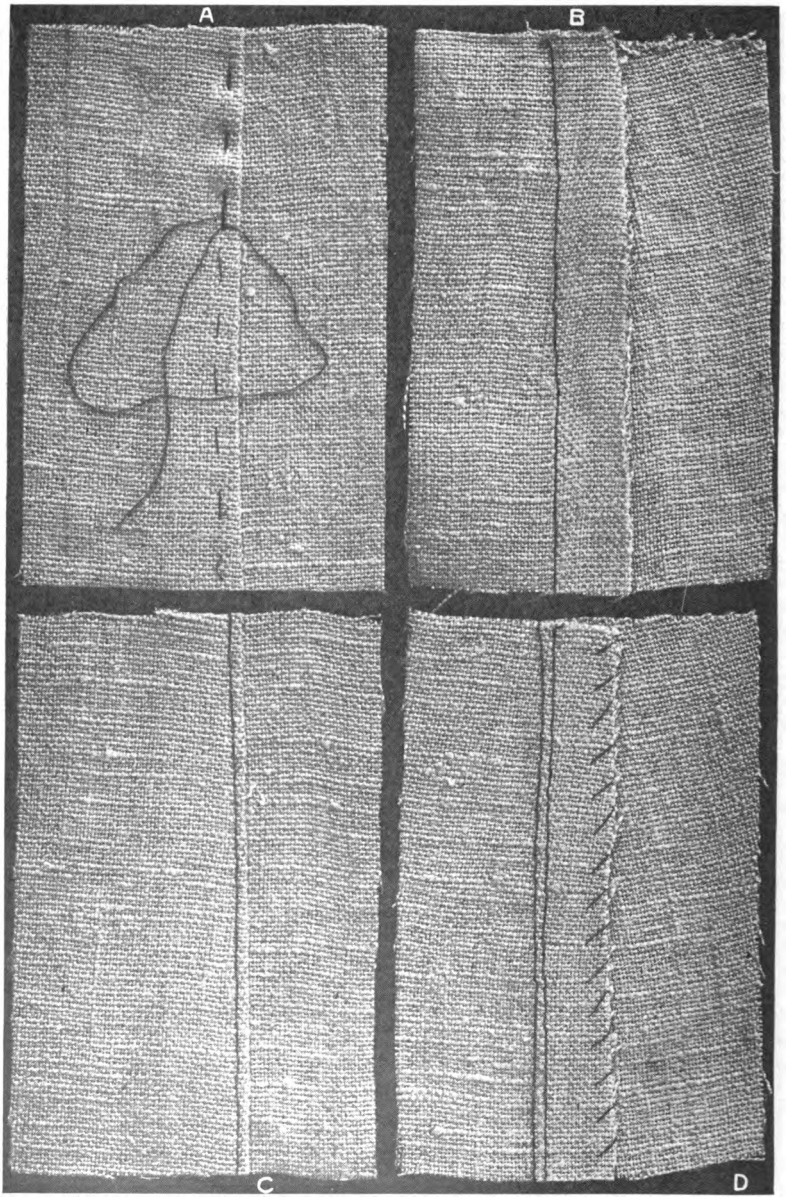

FIG. 199.—Cord seam; *A*, basting for outside stitching; *B*, wrong side before outside stitching; *C*, outside stitching; *D*, wrong side after stitching.

Stitching and Finishing Seams.—A tailored seam implies an outside stitching. There are numerous ways of making this effective. Following are methods of finishing several types of tailored seams:

1. *Plain Seams.*—While not a tailored seam, it is used at times in tailored skirts where one wishes to have the seam invisible (hip seam or center back). When so used, it is stitched, bastings removed, and the edges overcast together, or the seams opened and each edge overcast separately. It is the foundation of a number of the tailored seams (Fig. 198).

2. *Cord Seam.*—Stitch a plain seam, remove bastings, turn the edges of the seam toward the front, baste close to the folded edge on the right side, stitch one-sixteenth inch from edge. Trim seam to five-eighth inch on wrong side and overcast edges together. Used on hip seams or elsewhere, if simple stitching is desired (Fig. 199). *Single and double stitched seams.* A modification of the cord seam may be made by opening the plain seam and stitching close to the edges on both sides of the seam. Another method is to use the stitchings close to the edge and stitch again once or twice or more and as far apart as desired. Such stitchings are purely for ornamentation, so judgment must be used as to spacing in order to secure pleasing results.

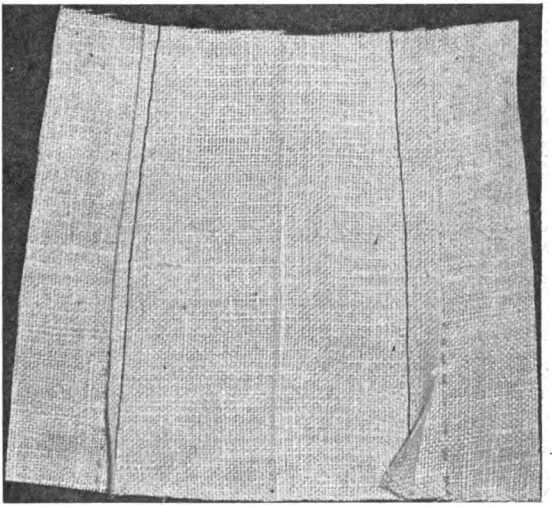

FIG. 200.—Tuck seam; basted as for panel; stitched any desired depth.

3. *Tuck Seam.*—Baste the same as panel (p. 332) and stitch only on the outside as far from the edge as may be desired. Use quilter gauge or presser foot as a guide in stitching. The edges are finished the same as a cord seam. If using heavy material, the

edge of the seam next the skirt may be trimmed narrower than the other to avoid a ridge on the outside of the garment after pressing (Fig. 200).

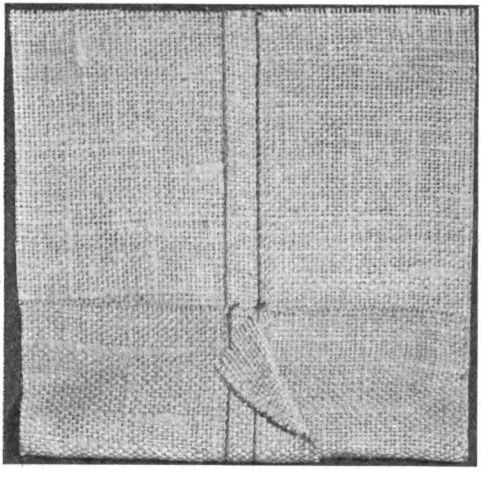

FIG. 201.—Welt seam, right and wrong side.

4. *Welt Seam.*— Same principle as cord seam. First stitch the seam as a plain seam, remove bastings, turn seam toward front of skirt and baste close to the turned edge. Trim the edge of the seam next to the skirt narrower than the other and stitch again any desired width (Fig. 201).

5. *Fell Seam.*— Stitch as plain seam on the right side of skirt, remove bastings, turn seam toward the front, trimming the under edge to one-quarter inch and the upper edge three-eighth inch in width. Turn the upper edge under the lower, baste, and stitch (Fig. 202).

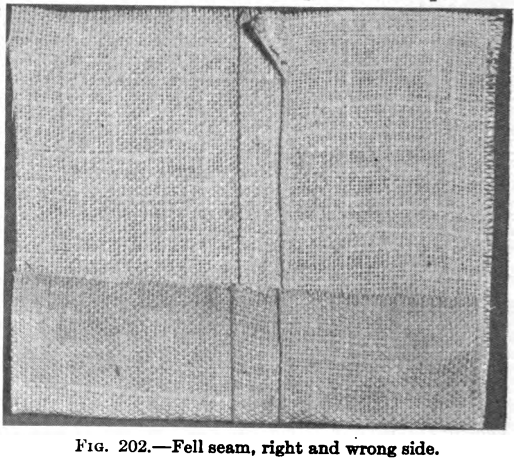

FIG. 202.—Fell seam, right and wrong side.

6. *Lapped Seam.*— In effect this is much the same as the fell seam, but more difficult to make. Lap the edges of the gores, so that the seam lines exactly meet, baste through these lines. Having the edges of the seams exactly even, turn first the edge on the right side of the skirt, then the one on the wrong side. Both edges must be most

carefully turned in order to have good seam lines; baste and stitch on each edge (Fig. 203).

7. *Slot Seam.*—Edges on both sides of gore turned in on seam line; a lengthwise or crosswise strip of material set underneath to hold edges of seam together; stitching any desired width from the edge, like tuck seam (Fig. 204).

All raw edges should be trimmed evenly and overcast neatly, unless the material is so closely woven that it needs no further treatment than the outside stitching. Seams are sometimes bound with bias seam binding to match in color the material of the skirt. The great objection to the binding is that it mars the outer surface of the skirt when pressed. The color also washes into the skirt sometimes when laundered.

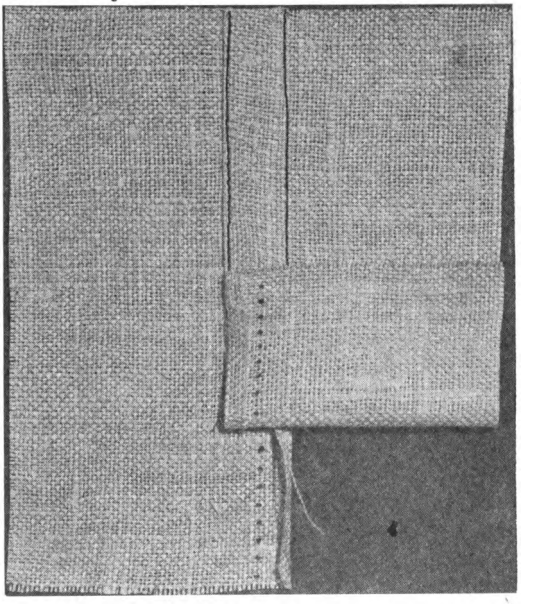

FIG. 203.—Lapped seam, right and wrong side.

Better results will always be secured if the seams are pressed just before the outside stitching is done. Always test your stitch and tension on double thickness of cloth and same grain before stitching directly on the skirt. A tailor finish necessitates a fairly long stitch in order to be effective. It is well to get away from the idea of the small fine stitches on undergarments.

Finishing Skirt at Waist Line.—For a normal waist line finish, with separate belt of linen *tacked* to place, use a piece of thin-twilled belting, which has been shrunk. Place hooks and eyes temporarily. Place around figure and adjust skirt to belt; pin to place, and baste. Cover the raw edge of skirt with a piece of narrow linen

tape (shrunk), and stitch top and bottom of tape (Fig. 205*A*). Sew hooks and eyes on permanently and make outside belt of linen, for which take two lengthwise strips of linen the desired width of belt plus seams. Allow for lap at ends of belt. Either stitch the two strips together and turn through, baste and stitch again on the outside stitching to be uniform with the seam stitchings, or turn the edges of both strips in together and stitch on the outside, same as other (Fig. 205*B*). The belt may be fastened with hooks and eyes, snaps, buttons or a buckle. For a button, a buttonhole must

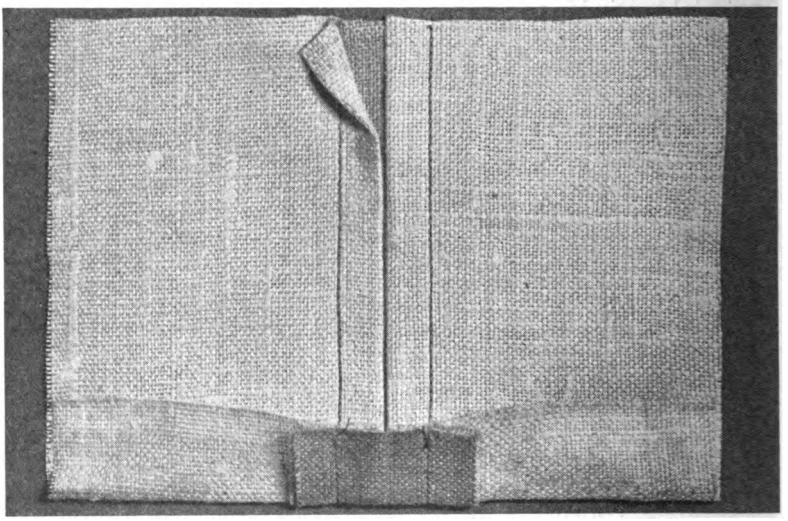

FIG. 204.—Slot seam, right and wrong side.

be worked and for a buckle an eyelet or set of eyelets; also a strap to hold the loose end in place. This belt should be tacked to the skirt at the back and over the hips.

2. Another finish for the normal waist line, is a belt of cambric or muslin, over which may be worn a separate belt of linen or to which may be sewed one thickness of linen to simulate a separate belt. For a separate belt, the cambric may be cut to be finished as narrow as three-quarter inch, but when the linen is to be stitched down to it, the cambric belt must be made as wide as the outside finish. For this, take a lengthwise strip of cambric twice the width of the belt plus the seams and two inches longer than the waist

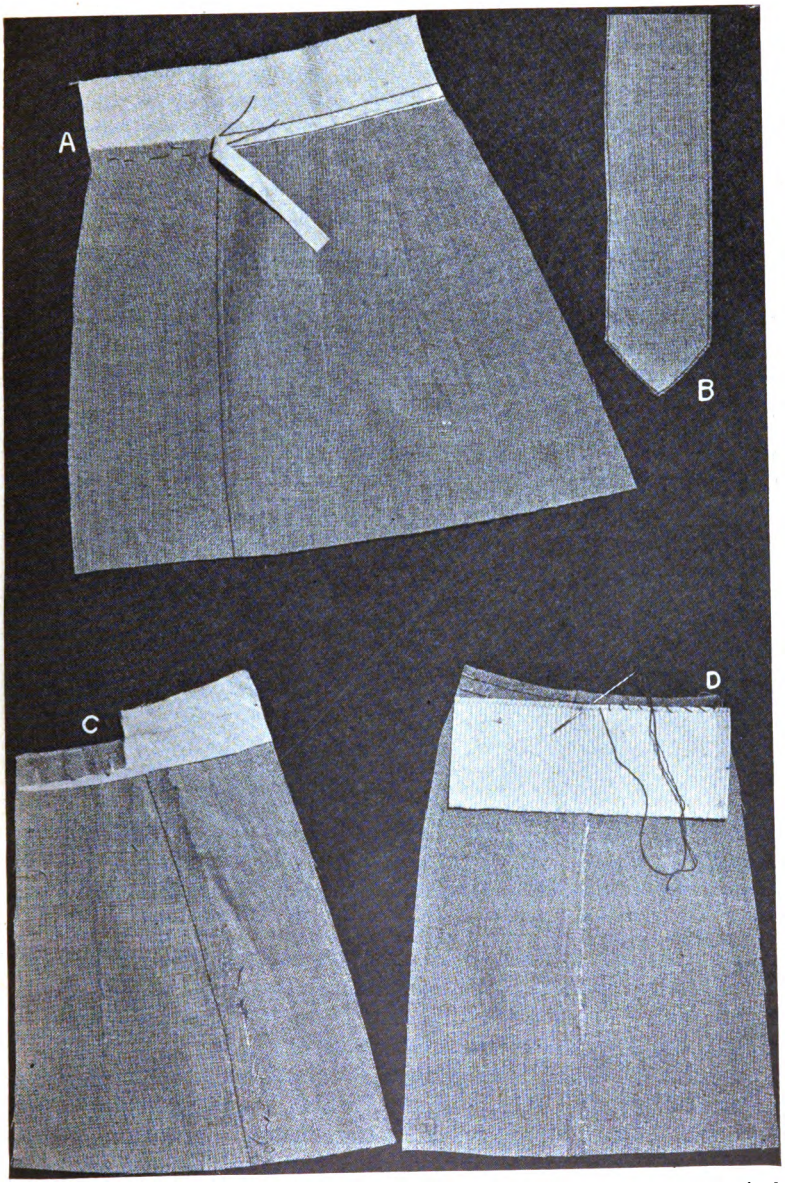

FIG. 205.—Waist line finishes for tailored skirts; *A* and *B*, normal waist line; *C* and *D*, raised waist line.

measure. Turn one inch back at each end and crease one-quarter-inch seam on both long edges. Fold the belt through the center lengthwise. Pin around the figure, and turning back the upper part, pin the skirt to place on the turned edge of the lower part. Remove skirt, baste to place, also baste upper edge down and stitch all around belt on edge. Make separate belt. If making belt in one with skirt, take a lengthwise piece of skirt material, three or

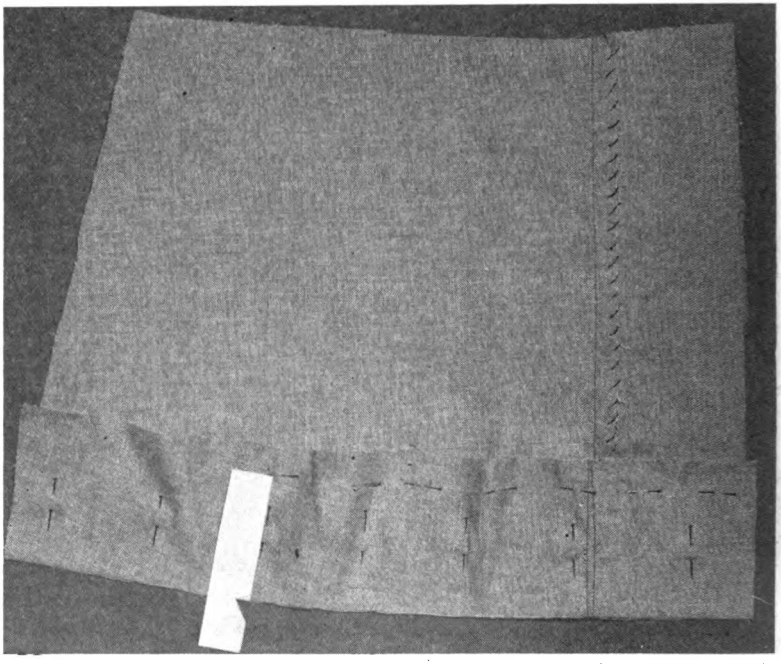

FIG. 206.—Marking depth of hem after skirt has been hung.

four inches longer than waist measure, according to the style of finish desired, and the width of cambric belt plus seams. Turn seams, baste to cambric belt, placing facing on extension, stitch all around belt to coincide with seam stitchings.

Finish of Skirt with Raised Waist Line.—There are two methods of placing to belt, either of which has its advantage. For both, have belt prepared, correct waist measure, with hooks and eyes. (1) Use *ribbed* cotton belting, which, if shrunk, is better starched to

give it firmness, (2) or percaline belt with featherbone extenders. The latter shrinks little and does not soften up. Turn the ends of belting but once, so as not to make it thick, sew on hooks and eyes, and finish the ends with a blanket stitch to keep from ravelling.

1. Place bias strip of cambric at top edge of skirt, so as to keep it firm when turning and stitching. Turn the edge of the skirt on the line marked for high waist line (Fig. 205*C*). Stitch through turned edge, one-eighth inch from turn, and baste skirt to belt, and hem belt on wrong side to stitching (Fig. 205*D*).

Fig. 207.—Finishing hem with bias binding.

2. Turn edge of skirt as in Fig. 205*C*, baste to belt and stitch through both belt and skirt.

The first method has the advantage of admitting easy change of belting if belt softens, or shrinks in washing. In the second method there is less danger of the unskilled worker stretching the material in stitching the skirt at the top.

Laying and Finishing Hem.—When a good finishing line has been turned and marked with thread, lay the skirt out upon the table and measure up from the finishing line at close intervals, the depth you wish the hem to be plus one-quarter inch for turn or sewing edge; mark carefully with pins or chalk. Cut on this line.

There are several methods of removing the fulness at the top of the hem, each having its preferred place according to the materials of which the skirt is made (Fig. 206).

1. Fold the fulness at the top of the hem in small darts which must not run to the bottom of the hem, because they would make points in the edge. Hem the edges of the darts down.

2. Gather the fulness in top of hem with fine gathers and draw up to fit the width of the skirt at this place (Fig. 212). Shrink fulness out. Where materials are used that are not heavy, the edge of the hem is sometimes just turned in and stitched. Where there is any thickness, however, it is better to take a strip of bias binding and lay the *folded* edge, one-quarter inch from top of hem, baste and stitch to the hem only. Then lay the other folded edge of the binding down to the skirt, baste and stitch, or hem by hand. *Bias* binding is preferable because it gives sufficiently not to hold the hem tight after laundering (Fig. 207). Be careful in placing it, however, not to hold it tight. Make a bias join at the ends. When placing darts, press them into place before laying hem. Before stitching hem, press, so as to have good stitching.

3. When finishing the bottom of a five- or six-gored skirt, after the line is turned, if the seams are stitched only to the finishing line, when the hem is turned, it will be possible to dispose of all the fulness in the hem, at the seams, by lapping it underneath, and cutting it away, making a perfectly smooth hem. This could not be done unless one were sure not to need the extra length to let down, unless instead of cutting the material away, it is simply lapped underneath, which might be done if the material were not too heavy.

SUGGESTIVE QUESTIONS

1. What type of material would be best for a separate tailored skirt of cotton or linen, heavy or light weight?
2. Should the design be simple in line?
3. Are circular skirts practical as washable garments? Why?
4. State a rule for basting gored skirts for fitting.
5. What kinds of seam finishing would you use for such skirts?
6. How would you finish the placket of a linen skirt opening under a tuck?
7. How would you finish the hem?
8. Describe two methods of finishing skirts at the belt.

CHAPTER XVIII

OUTER-GARMENTS: LINGERIE BLOUSE AND DRESS

Suitable Materials	*Suggestive Trimmings*
Batiste (plain or embroidered), in white or color.	Fine needlework...Embroidery; ornamental stitches.
Voile (plain or embroidered), in white or color.	Self-trimming .....Tucks or plaits; ruffles, puffings.
Crêpe (plain or embroidered), in white or color.	Lace insertion..... Valenciennes: German or French, Cluny, Irish.
Handkerchief linen, in white or color.	
Swiss (embroidered), in white or color.	
Dimity (striped or cross-barred).	

Designing the Blouse or Dress.—Simplicity and daintiness should be the keynote of the design and construction of a lingerie dress. With this in mind, study the tendencies of the prevailing fashions, the lines that are followed, the fabrics that are used; choose of the same, that which you will use; then design your dress so that it will embody, but not in the extreme, some of the features of the costumes of the day, and be suitable for the material chosen, while conforming in a pleasing way to the lines of your own figure.

Lingerie waists may be cut on the lines of a simple shirtwaist with a gathered sleeve, on those of a kimono waist, or some modification of either.

With the kimono waist we find fewer tucks or plaits. With the simple shirtwaist we find a greater tendency toward the use of tucks and plaits, while with both, fashion alternates elbow length and full length sleeves, high and open neck lines.

Calculate (using pattern) the quantity of material you will need for the waist.

Preparation of Material for Cutting Waist.—It is well to shrink the materials, especially crêpe, before making them up. If the waist is to be ornamented, with tucks or needlework, this should all be done before placing the pattern for cutting.

Plaits and Tucks.—Lay a box plait or hem not more than one inch in width for the right hand side of the opening, either back or

front, and a hem on the opposite edge, one-eighth inch narrower; or a hem and fly opening may be used (Fig. 135). Plan and lay the tucks, being careful to match them at the shoulder seam if they are more than thread tucks (Fig. 70). Sew the tucks with fine running stitches. Be careful to run a basting thread through tucks that extend to the neck so they will be turned in the right direction; and kept so until the collar is placed. See that the tucks on the shoulder also turn in the right direction. Tucks should also be placed in the material for the sleeves, before cutting. Hand-run tucks and seams give a note of distinction to the waist.

Needlework.—Any ornamentation of this kind should also be applied to the material before cutting out. Block out the outline of the waist from a carefully fitted pattern and stamp the pattern for the embroidery within this outline and do the work before cutting. If the design is to be carried over the shoulder seam, it may be necessary to cut and finish this before stamping the pattern, but do not cut any other part of the waist. All small pieces, such as collars, cuffs and belts should be tucked or embroidered before cutting. When lace is to be used for ornamentation, if set into the waist in a pattern, stitch and finish the shoulder seam, put the waist on a form or open up the underarm seam, lay waist flat on table, and apply the lace, baste and try the waist on to see if the design is pleasing. If so, hem or stitch the lace to place before closing the underarm seam. Apply lace to sleeve in the same way.

Cutting, Basting and Fitting Waist.—Follow the directions for these processes given on p. 96. Note carefully the placing of the pattern for a back or front opening. Make all necessary alterations after fitting, and try on again.

Finishing Seams, Etc.—Both waist and sleeve seams should have a uniform finish. Use a French seam, a plain seam with edges turned in and run together, or set entre-deux or lace insertion into the seams; fagoting or hemstitching may be used. The box plait may be stitched by hand, sewed with a running stitch, feather-stitched, hemstitched, tucked or corded, in keeping with the rest of the waist. The hem on the under side need only be run. The bottom of the waist should be finished with a narrow hem.

Waist Line Finish.—An elastic run through a narrow hem makes an excellent finish. A narrow tape, either linen or twilled cotton, may be used for a belt. Place it as you would for a shirt-

waist. Should you prefer to keep the waist without gathers at the waist line, in order to make laundering easier, one of the clever devices sold by the stores for keeping waists in place might be substituted for the belt.

Sleeves.—The sleeves may be gathered or set into the armhole without fulness. The seam may be plain, with a bias strip of material basted in with the sleeves holding the material toward the waist. Stitch all together, and fold the binding inside the sleeve and hem it down to the stitching of the sleeve. A cord may be set inside a bias strip of material and placed between the sleeve and the waist; the edges of this seam will need to be overcasted neatly. Some prefer to set the sleeve with a French seam, but it is very difficult to keep a good line on the armhole in using this method. The sleeve, if long, may be finished at the hand by rolling and whipping the edge, by setting on dainty ruffles of material or lace, or both. These may be gathered on a cord, shirred with a heading, or rolled and whipped to place. Small turn-back cuffs, trimmed with insertion or edged with a frill of lace or footing, or a tiny plaiting of the material, are placed with the right side of the cuff to the wrong side of the sleeve, a narrow seam sewn and overcast and the cuff turned over the right side of the sleeve. The seam of the sleeve may be left open for about two inches and finished as you would a placket on a lingerie skirt (p. 254), using very small snaps for fastening. When a deep cuff is applied, it may be left open its entire length, faced on both sides and finished with buttons and loops, or buttons and buttonholes, or it may be seamed to within two inches of the bottom and this opening finished like a placket (Fig. 208). Turn the edge of the cuff in at the top and baste to the lower edge of the sleeve which has been gathered to fit it. Then turn the sleeve to the wrong side and turn in the raw edge of the

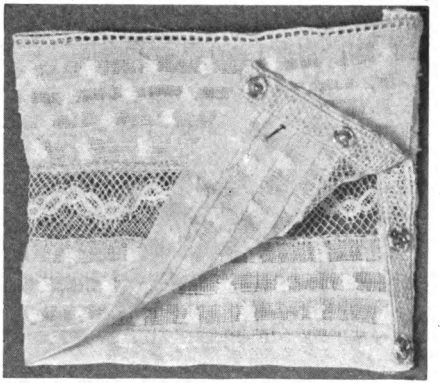

FIG. 208.—Cuff finish for lingerie blouse.

cuff on the line of the outside edge. Stitch through cuff at the top, or finish in any way that the waist is finished. The cuff may be finished at the hand with a hem, with or without frill of lace, or in almost any way fancy dictates.

Collars.—If the waist is to have a high closing, turn the lower edge of the collar up three-eighth inch; place this folded edge to the neck line of the waist, baste to place. Let the end of the collar extend across both hem and box plait of the waist. This collar will need to be folded away to fit in the center back, which will make it somewhat bias, or else a dart will need to be taken out in the side of the collar. Face the ends of the collar with net braid or material of the waist, cut lengthwise. Finish the collar at the bottom as the cuff is finished. If of lace, hem to the right side of the waist and whip the raw edge of the inside of the waist. Roll and whip the top of the collar, which can be shaped somewhat to fit the curve of the neck, unless tucked close to the top. Finish with an edge of insertion, a cord, or shaped pieces turning over the edge. To keep the collar in position, sew stays of wire, one on the left hand end, and one on each side on a line with the highest point at the side. Always use washable stays. Fasten the collar with buttons and loops, buttons and buttonholes, snap fasteners, or hooks and loops. If an open neck is desired, cut some becoming type of turn-over collar in cambric, large or small, and fit to the neck of the waist which has been cut on the line desired. These collars may be cut single or double, according to the finish to be used. If the edge is to be rolled or hemstitched, a single thickness will suffice, otherwise cut two. Place the pattern so that the center back is lengthwise of the material. Place the two right sides of the material together. Seam the outside edges together, turn through to the other side and baste the edges firmly. Baste along the edges that are to be joined to the waist, pin to place at the neck, and baste. Take a strip of material, bias, one inch wide and baste on the collar. Stitch through facing collar and neck of waist. Turn facing over, baste and hem to waist. Follow the same method of placing, for collar of single thickness. When the collar is hemstitched on the edges, if a line of hemstitching ornaments the front of the waist, it may also attach the collar to the waist.

Waist Closing.—Cut buttonholes lengthwise of the material if the waist closes in the front, with box plait; crosswise if it closes in

the back. Use small pearl, crochet or linen buttons. Sometimes buttonholes are omitted and fancy buttons used for trimming, the waist fastened beneath with snaps. Try to have a button cover the sewing of the snap.

LINGERIE DRESS

Suggestive Materials	*Suggestive Trimmings*
Lawn (Persian or linen), in white or color.	Lace insertion Valenciennes: French or German, Cluny, Irish, Torchon.
Dimity (striped or cross-barred), white or figured.	Ribbon or silk for girdles, etc.
Swiss (embroidered), in white or colors.	Footing.
Batiste (plain or embroidered), in white or colors.	Embroidery.
Handkerchief linen, in white or colors.	Ornamental stitches.
Organdie (washable), in white or colors.	Self-trimmings.
Crêpe (plain or embroidered), in white or colors.	Tucks.
Mull, in white or colors.	Hems (reversed). Shaped hems.
Voile (plain or embroidered), in white or colors.	Pipings.
Net (washable).	Bindings.
	Folds.
	Cordings.
	Shirrings.
	Buttons.
	Findings
	Thread.
	Snap fasteners or hooks and eyes.
	Cord.
	Buttons.

Purchasing Material.—Having decided upon the kind of material you will use, designed the dress, and provided yourself with a suitable pattern for cutting it, drafted, draped, or commercial, calculate the quantity necessary to make the dress. Also estimate the amount of trimming required and the findings. Purchase the same.

Shrinking Material.—It has been generally conceded that it is best to shrink all cotton or linen materials for lingerie dresses before making them up. This process entails extra work in the beginning but allowance for shrinkage could be made instead in the making, if we could count on the amount the material would shrink. It may save letting out seams or dropping hems later on when the dress has been laundered.

Cutting Dress.—Unless tucks and plaits are marked on the pattern, these should be laid in the material before placing the pattern for cutting out. If tucks are to be placed in the waist and

sleeves they must either be basted or stitched in before the cutting is done. Allowance for tucks in the skirt, whether running across or up and down, may be made when cutting, and these basted to place. Open and fold your material end to end and plan the best placing of the pattern. After you have decided on the most economical cutting, pin the pattern to place and cut the material.

Marking Seams.—Trace seams very lightly so as not to mar the material. Heavy tracing cuts the threads. Observe the general rule for tracing seams.

Basting Dress.—Use fine thread for basting seams. Avoid using colored thread except where very necessary, to mark notches, points for gathers, plaits or places for trimming. Plan your basting so as to have as few fittings as possible. If the dress is a simple one-piece garment, a straight or gored skirt with hem and tucks, gathered or plaited at the waist, and a simple full waist, proceed as follows:

1. Prepare temporary band of skirt.
2. Baste the seams.
3. Lay hem and baste (not turning upper edge).
4. Lay tucks and baste (in skirt).
5. Gather or plait skirt and baste to the band.
6. Baste seams of waist and sleeves.
7. Pin sleeve in waist, baste to place.
8. Baste a cambric or soft muslin pattern of the collar, cuffs and trimmings to place for fitting. If cut in the material, it sometimes causes waste, as alterations made in waist may change the position or the shape of these.
9. Gather or plait the bottom of the waist to the band.

If the skirt is to be made of a succession of flounces set one upon another; these should be basted together to see if the proportionate depths are good, and the fulness well distributed, both on the flounces and at the waist.

If the dress requires a foundation skirt, this should be fitted first, and flounces, ruffles or other form of skirt be placed on the foundation for a second fitting.

When the dress is to be worn over a separate slip, first fit the slip, turning the line at the bottom of the skirt and at the neck. Then fit the dress over the slip, to get a better idea of the finished gown; note the line at the bottom and other points that may need alterations.

If an underbodice is used to which to attach waist and skirt, have this ready to fit at the same time as the dress, so all points for gathers, etc., may be marked then.

Alteration.—Make all alterations, bearing in mind the necessity for having an easy fit in all washable materials, especially if you have not shrunken them before making the garment. When the alterations are completed, try the dress on again to be sure that everything is correct before finishing it.

Stitching and Finishing Seams.—The seams of lingerie dresses may be treated in any of the following ways, suiting your method of treatment, of course, to the fabric and the style of the garment. Handwork is always to be recommended for lingerie dresses, hand-run seams, tucks and hems. Individual workers are, however, subject to time limits, therefore one must choose the very best treatment to which one can devote the time, or for which one can afford to pay, if the work is done by another.

1. French seams may be used on the sheer fabrics. These must be carefully done, the first sewing best done by hand, using a running stitch. The edges must be very carefully turned and creased for the second sewing. This may either be done by machines or hand (Fig. 119).

2. If one cannot make a good French seam, a plain seam may sometimes be used, the edges overcasted or turned and run together (Fig. 217*A* and *B*).

3. Lace insertion or tiny veining may be basted over the seams and the edge of the lace hemmed to the material on the right side. The edges of the seam are then trimmed away on the wrong side, leaving a scant eighth of an inch; this is then whipped down into the stitches of the hemming so as not to show additional stitches on the right side of the garment. If limited in time or working on very inexpensive material, instead of hemming the lace by hand on the right side, it may be stitched by machine, the raw edge turned back and stitched again; then cut close to the stitching. Let the first stitching fall one-sixteenth inch inside the edge of the insertion or lace, the second stitching directly on the edge, so that greater strength is added to the raw seam. It is better to use this method only in skirts where the finish is less likely to show from the right side than in waists.

4. Entre-deux may be used to finish seams of very sheer ma-

terials. Set in with small French seam. Lace may also be whipped on to the rolled edges of seams. This would better be done on seams having straight edges, as it is difficult to keep bias edges from stretching.

5. Fagoting makes a very effective seam finish. The edges may be finished with tiny hems, folded but not sewed, rolled and whipped, or in some cases, simply turned once, the fagoting worked from one rolled edge or hem to the other. Colored thread makes an attractive finish sometimes.

6. Hemstitching by hand is sometimes simulated by turning the two edges of a seam to the wrong side, inserting several thicknesses of tissue or any paper that tears easily between the edges and stitching by machine. The paper is torn away and a loose stitch appears, somewhat resembling hemstitching. Some family machines have a hemstitching attachment, but these have not been so generally satisfactory. A very effective trimming and seam finish is made by having hemstitching done on power machines. To prepare the seams for this, baste as for plain seams in waist and skirt, then fold them back as for an outside stitching. The hemstitching is done on this edge half on the fold and half on the single cloth and the raw edge on the wrong side trimmed away afterward. The operator will usually furnish white or black cotton and black or white silk, but it is necessary to take colored silk or cotton, two spools of either.

Plackets.—Like all other plackets, that on a lingerie dress should be as inconspicuous as possible. If the skirt is of sheer material and very full, a continuous (bound) placket facing may be used. Cut this from the material and make according to directions for a one-piece placket on drawers (p. 247, Fig. 139), except that it should be sewed by hand. If the continuous placket facing should be too visible, net or lace braid may be substituted. On the side which turns back, run a facing of the net. Sew with small stitches. On the other side face the extension with the net by sewing it to the under side. Be careful not to have the extension wider than the facing on the other side of the placket. Use very small snap fasteners for the placket, one inch apart.

Hems and Other Finishes for the Bottom of Lingerie Skirts.—Turn the line on the bottom of the skirt as usual. If the skirt is rather straight, or only slightly gored, a hem may be used,

but if very flaring, a facing will be necessary. Follow the direction for basting either hem or facing. A facing would need to be sewed first at the bottom, and turned back and basted at the top, the same as a hem. When either hem or facing is laid, it may, in sheer materials, be sewed with a running stitch at the top, or if of looser irregular weave, such as crêpe, it may be sewed with a hemming stitch, placing it so the stitches do not show on the right side.

Reversed Hem.—On a skirt cut of straight widths the hem is sometimes turned and finished on the right side of the skirt, using a cord in the top edge. To do this the seams must be clipped at the finishing line, turned, and stitched on the right side. A soft cable cord is then placed under the top of the hem and sewed in place with a running stitch. The hem is laid to the skirt, basted and then sewed down to the skirt directly under the cord (Fig. 233).

Pipings.—Pipings of white or color may be used in the top of the hem, if it is stitched by machine, or slip-stitching will make a softer, daintier finish. On very sheer materials the hems are sometimes cut into such shapes as one's fancy dictates, and the upper edges ornamented with decorative stitches. Another method of finishing is to run a heavy cord in the bottom of the hem to weight it and hold the fulness of the skirt out somewhat. Cords are sometimes sewed into the very edge of the material, the hem being omitted altogether. Or the edge may be rolled and whipped with heavy perle cotton, either in white or colors.

Ruffles, flounces, puffings or bands may be used to finish the bottom of a skirt. Such must be in accord with the other ornamentation of the dress. These may be set in under insertion, on bands, or at the lower edge of the skirt.

Waist Line Finishes.—Lingerie dresses may be finished in various ways:

1. The skirt if of sheer soft material may be rolled and whipped to a plain, lace, or embroidered band, and the bottom of the waist treated in the same way.

2. The skirt may be shirred with a heading and set up on the waist, which has been previously gathered to a narrow band of tape, or the skirt may be drawn on a cord or a succession of cords forming a yoke, the waist being sewn to the top cord. A succession of shirrings may form a yoke, and the top be set into a band of material; the same finish may be used for a skirt slightly gathered, or with suffi-

cient fulness to ease in, and also for a skirt the fulness of which has been taken out in tiny tucks at the top. Both skirt and waist may be gathered into the band or each finished separately, or sometimes both set on a net or muslin underbodice which has been daintily trimmed. In using the latter, fasten waist and skirt together only at the waist in order to make laundering as easy as possible. A sash or girdle of silk or ribbon may be worn to cover the plain waist band.

The same principles would apply to the normal or raised waist line, the back or front closing, except that in the latter a portion of the skirt, unless opened directly in the front, must have a separate belt extending from the center front to the placket opening. This belt may be caught to the other by snap fasteners.

Use hooks and eyes for fastening the waist band, and snap fasteners, buttons and buttonholes or loops, for the placket, sleeves, collar and trimmings. If one does not like snap fasteners, small hooks and eyes and buttonholed loops make neat finishings.

Sleeves, Collars, Cuffs, Vests.—In the section on lingerie waists, directions will be found for the completion of the remaining portions of the dress.

SUGGESTIVE QUESTIONS

1. Name material suitable for lingerie blouses and dresses. For what special quality does each recommend itself?
2. Plan a design for a lingerie dress for yourself. What will be the keynote of your design?
3. What kinds of seam finishes are good to use in such garments?
4. Suggest several ways of joining skirt and waist together to make a one-piece garment.
5. Suggest some new individual touch you might put on such a dress as to make it quite distinctive.
6. Calculate the quantity and kind of material from which you could make yourself an attractive lingerie dress to cost not more than $5.00 including all items, except working.

CHAPTER XIX

OUTER-GARMENTS OF WOOLEN MATERIAL

THE construction of two types of garment, (1) a tailored skirt, and (2) a simple dress, suitable for school or street wear, will be considered.

Give considerable thought to the choice of materials and the design of the garment; then provide yourself with a good drafted, commercial or draped pattern for cutting, and the necessary quantity of material to construct the garment. Be equipped also with the needed tools.

TAILORED SKIRT OF WOOLEN MATERIAL

Suitable Materials

Serge (fine or heavy twill).	Poplin.
Cheviot.	Whip-cord.
Tweed.	Broadcloth.

The design for the skirt should be chosen with regard to simplicity of line. It should have no decoration aside from braid, buttons, or a girdle of satin, silk, or material of the skirt.

Preparation of the Material.—All cloths should be sponged and pressed before making up, to prevent the material becoming spotted or shrinking up when pressing seams and hems, or after being caught in the rain. This may be done by rolling the cloth in a very wet sheet, letting it lie over night, and then pressing the cloth on the wrong side until dry. In pressing, move the iron slowly back and forth continually. Do not *iron* it, nor let the iron rest long enough in one spot to leave its imprint on the cloth, else it will need to be dampened and pressed again. If you do not wish to do this work yourself, the cloth may be taken to a tailor to be done, the charge for this being not more than five cents per yard. Some cloths are sponged and pressed ready for use before leaving the factory. When such have been sold to you, if there seems to be a very high gloss on the surface, do not fail to test the sponging by dropping some water on one end of the cloth and letting it dry. If spots show after it has been dried, the same will happen when the seams and hem are pressed, or you are caught in a shower.

Cutting Skirt.—The general rules for cutting linen and cotton skirts may be applied to the woolen skirt. Serge and cheviot may both be cut double, but broadcloth or any other smooth surface cloth must be cut singly, and with the nap running down toward the bottom of the skirt. To find the way the nap runs, pass the hand over the face of the cloth; the direction which makes the cloth smooth will indicate the edge which will be toward the foot. Care must be taken in cutting single pieces not to cut both for one side of the skirt (Fig. 191). When working with materials that fray badly, it is well to overcast the edges roughly to protect them while putting the skirt together. Avoid a seam with two bias edges coming together in heavy twills, unless there is an inverted plait to cover the seam. The twills meet at right angles almost, giving a displeasing effect (Fig. 209).

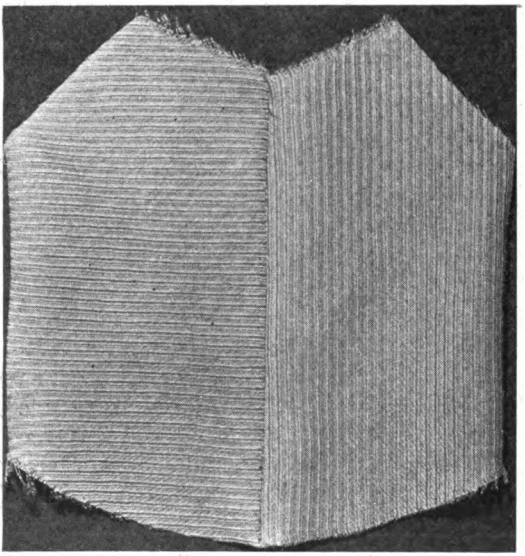

FIG. 209.—Effect of a bias seam in twilled material.

Marking Seams.—The best method of marking the seams is to tailor baste them (Fig. 183). They may be traced on chalkboard. Sometimes they are marked with tailor's chalk along the edge of the pattern, the pattern removed, the two wrong sides of the cloth laid together and the cloth patted along the seam edges, which will carry the marks through to the other side. This is not so secure a way, because the least slip of the cloth will change the line of the seam on the opposite side.

Basting Seams, Tucks, Etc.—Follow the rule for basting linen and cotton skirts (pp. 330–332). Extreme care must be taken to avoid stretching the bias edges of woolen materials. Circular skirts

should hang for some time after basting to let the material sag before turning line at the bottom.

Fitting Skirt.—Observe the rules for fitting skirts (p. 333). Fit the skirt easily, to allow for the taking up of the material in machine stitching and pressing. Where changes have to be made, place pins carefully and closely, so the new lines will not be difficult to follow.

Plackets.—For the placket on bias seams proceed in the same manner as for the linen skirt, using Prussian binding instead of the linen tape and silk (taffeta, messaline or some heavy silk), if the cloth is thick, in place of the cambric or nainsook. Use the same for the placket of the skirt opening under a tuck (Fig. 210*A*).

If the skirt has an inverted plait in the back, an excellent placket finish can be made as follows: Both center back line and fold of the plait must be carefully marked on both sides of the skirt. Open the center back fold and turn the skirt to the wrong side, place the strip of silk close to the edge of the placket, also the Prussian binding. Baste to place, fold placket back to place, and stitch on both edges of the Prussian binding and again to the right of this, ending stitching as in diagram. Press, sew on fasteners and hem silk facing down. On the left hand side, turn to the wrong side, baste Prussian binding just to the left of the marking for center back line; baste and stitch. Pink the edge of the extension if cloth does not fray; lay turned edge of silk just inside the pinked edge; baste, and stitch all around edge of silk on extension. Let it extend one inch beyond

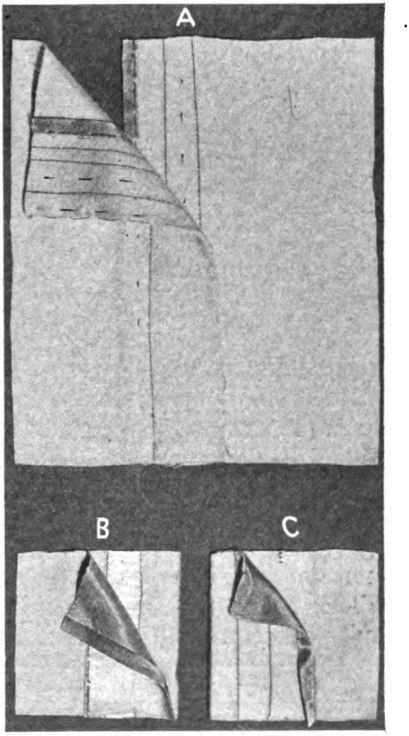

FIG. 210.—Placket facing for tuck opening on wool skirt; *A*, finished facing; *B*, detail of wrong side of extension; *C*, detail of wrong side of tuck.

center back line, having a selvedge edge if possible on this side. Stitch on outside to coincide with the stitching on opposite side of placket. Fold edges of plait, baste and press; stitch on edge as far as desired; press and slip-stitch down to the edge of the placket (Fig. 211). Remove tailor basting; if they are caught by the stitching it may be impossible to remove them.

Stitching Seams.—Use sewing silk (usually letter "A" unless materials are very heavy, when use "B") to match the material in

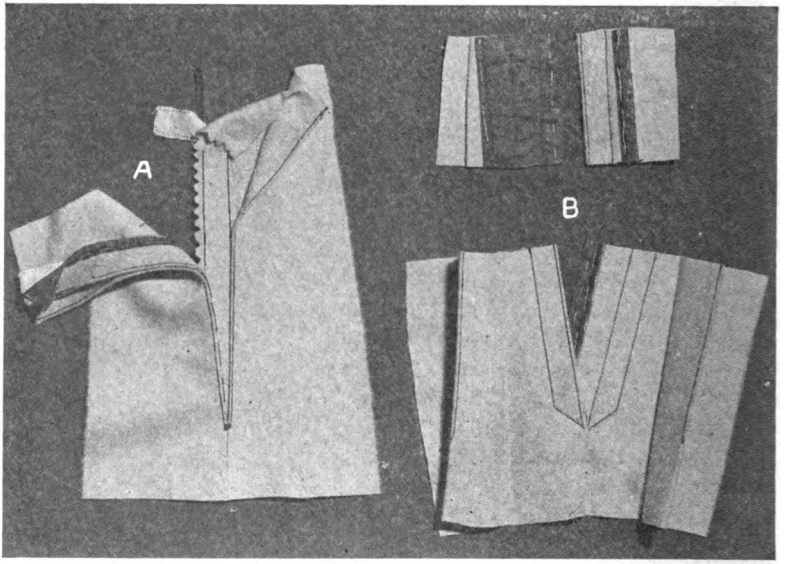

FIG. 211.—Placket facing for wool skirt with inverted plait at closing; *A*, completed facing, showing use of Prussian binding and silk; *B*, detail of outside stitching on placket and plaits before they are folded to edge of placket.

color, but a little darker in shade than the cloth, because in stitching it seems to work up lighter. On dark blue material, black sewing silk looks like blue, hence is perfectly satisfactory. Sometimes stitchings are made in a contrasting color. Avoid such unless very pleasing. Have a good tension and use a long stitch for effective results, but test before stitching skirt. Always use two thicknesses of material to test tension and stitch and same grain as nearly as possible as seams to be stitched. Press all seams, tucks, or bindings

before stitching on the outside. For this, lay a damp cloth on the wrong side of the material and press until the cloth is dry.

Seams of fine serge, broadcloth or smooth surface materials may be pinked on the edges (Fig. 212). This may be done by hand. In shops a small machine is used. Materials which fray may be over-

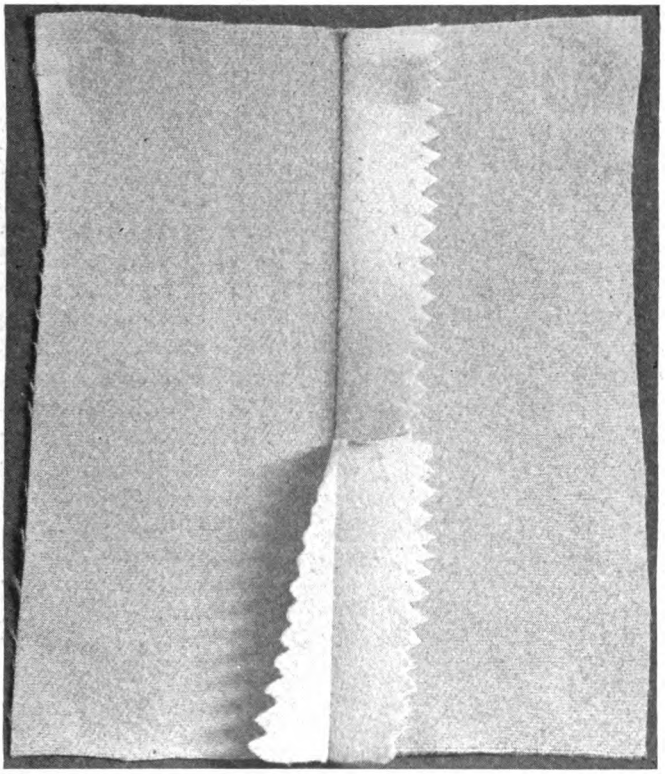

FIG. 212.—Cloth seam, stitched, pinked and pressed together or open.

cast. Sometimes they are bound; when finished in this way, use strips of bias silk. To use the bias binding first cut the strips one inch wide, fold the edges over one-quarter inch, using the bias folder. Baste this binding over the raw edge of the seam and stitch by machine. Ribbon seam binding is sometimes used, but is not satisfactory for two reasons: it does not wear well, and being

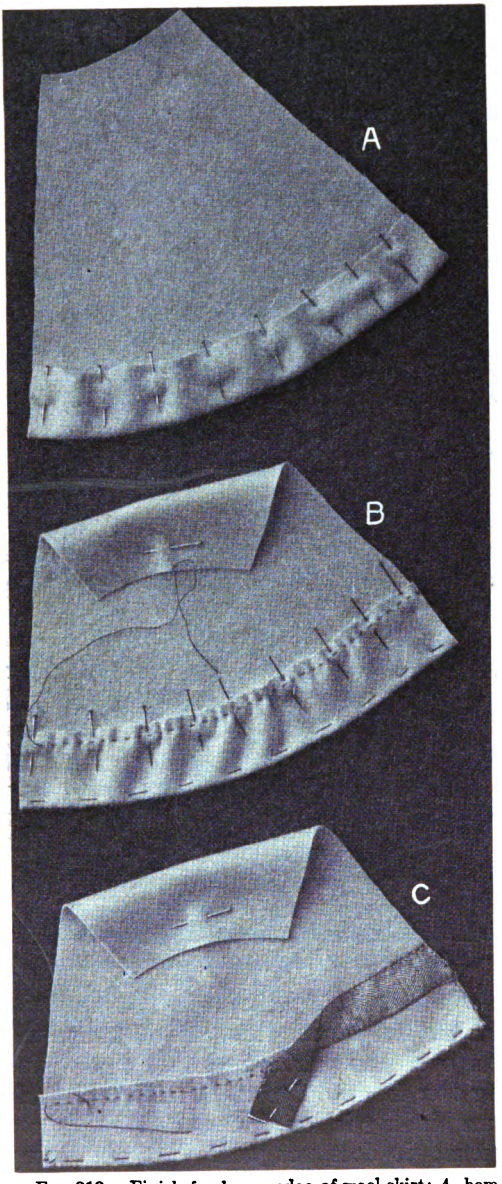

FIG. 213.—Finish for lower edge of wool skirt; *A*, hem turned and pinned; *B*, fulness drawn up by gathers; *C*, fulness shrunken out and Prussian binding basted to hem.

straight, holds the seam too tight, making it pucker the outside of the skirt unless carefully handled. Seams must be pressed after stitching, either open or together; if open, press over rounded board at first to prevent iron from marking the surface. Then press flat (Fig. 212).

Hem.—The line at the bottom of the skirt should be turned and the hem marked in the same manner as that on the linen skirt (p. 344). There are several ways to finish the hem at the top. Remove the fulness either by gathers, and shrink fulness out before placing binding (Fig. 213) or by darts. (1) Cloths which do not fray may be pinked in the edge, if the hem is to be stitched by machine (Fig. 215*C*). (2) Baste a strip of Prussian binding to the top of the hem, holding the binding very easy; stitch and press; then baste the upper edge of the binding to the

skirt and either blind hem it or stitch by machine (Figs. 213*C* and 215*D*). (3) The hem may be finished the same as linen skirts, with bias seam binding, in black or colors, and then pressed; blind hem to the skirt, or stitch by machine. (4) Broadcloth may be catch-stitched instead of using Prussian binding (Fig. 215*A* and *B*). (5) When making a skirt which is circular or very wide gored skirt, when the hem is turned, it will be found to have too much

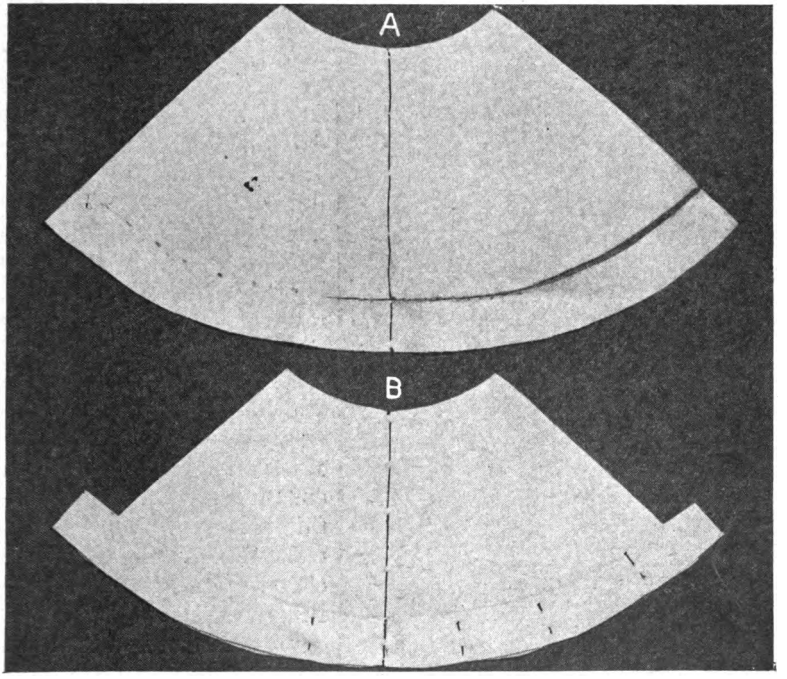

FIG. 214.—Facing for a circular skirt, using the allowance for hem; *A*, cutting facing from lower edge of skirt; *B*, placing facing for stitching.

fulness; this should be taken out either in darts or fulness. Proceed as with the others, until the finishing line is marked; then drop the hem and cut three-eighth inch below the finishing line. Use the strip cut off for a facing, placing the bottom edge of the strip to the bottom of the skirt, right sides together. First cut extra material in facing at center back or side seams. Stitch seam, turn, baste, press. Finish top of facing like hems (Fig. 214).

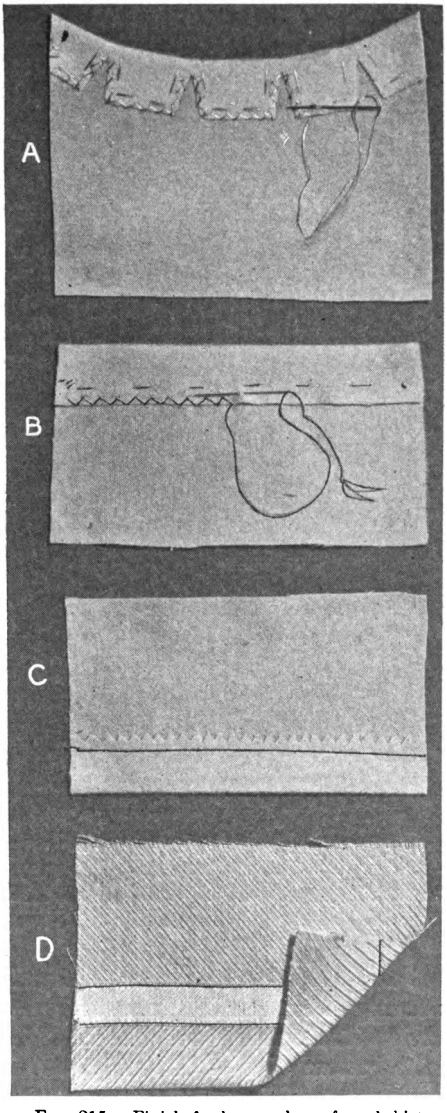

FIG. 215.—Finish for lower edges of wool skirts; *A*, curved edge slashed and catch-stitched; *B*, hem of cloth catch-stitched; *C*, hem pinked and stitched; *L*, Prussian binding stitched first to hem, then to skirt.

Belt.—For a skirt with a raised waist line, use a ribbed silk belting as deep as the raise in the skirt above the normal line. The belt, if wide, may be fitted with darts, the greater amount taken out in the center of the width, if one wishes part of the belt to fall below the normal waist line; otherwise, take the darts deeper at the bottom of the belt, sloping to nothing at the top. When finishing the skirt at the normal waist line, use narrow belting, either single and cover raw edge of cloth with Prussian binding, or the double belting, both edges of which are finished. In making a separate belt of the cloth, cut one strip of cloth lengthwise and line it with silk. Two thicknesses of cloth would make the belt too thick and clumsy. Press the belt carefully (Fig. 216).

Pressing. — When the skirt is completed, try it on to see if there is any fulness at the waist line or in seams over the hip. Fulness can be shrunken out on the pressing board by laying a wet cloth over the spot and pressing until cloth is dry, repeating the process until fulness is gone.

Curved seams can be well-shaped by pressing over a tailor cushion, using a wet cloth same as above. Tailor cushions are oval shaped, of heavy duck, stuffed tight with woolen rags, cut in small bits. Press the hem very carefully, using a wet press cloth. If the cloth should by any means become shiny on the right side while pressing, dampen the right side, take a clothes brush, or better, a

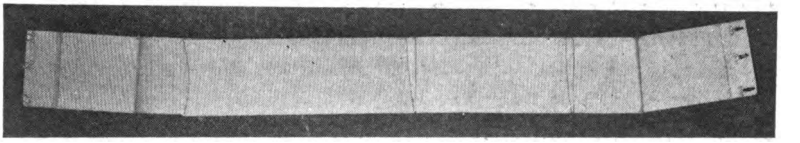

FIG. 216.—Belt of webbing fitted with darts.

whisk broom, hold the bristles tight at the end and brush up the nap while it is wet. Lay the wet cloth on the wrong side, hold the iron and pass it lightly over the surface until it is dry, then wet slightly, brush again and press on the wrong side until *almost* dry.

SIMPLE DRESS OF WOOL

Suitable Materials	*Trimmings*
Albatross.	Braid.
Challis.	Button.
Cashmere.	Satin.
Henrietta.	Silk.
Serge (fine twill).	Velvet.
Diagonal weaves.	Self-trimming.
Whip-cord.	
Poplin, Broadcloth.	

Findings

Lining (silk or net).	Seam binding (silk).
Sewing silk.	Bias seam binding (cotton).
Belting.	Hooks and eyes.
Prussian binding.	Snap fasteners.

Placing Pattern.—If the material has no nap (like broadcloth or zibeline), nor up and down, by reason of design in weave or dye (like wool brocades or figured challis), unfold it and lay the cut ends together, keeping the wrong side out and the selvedges even. Lay the pieces of the pattern on the material, according to directions indicated by tracings or perforations, but do not pin to place until you have decided upon the most economical method of placing. With some patterns and materials you may find it to advantage to use the original fold of the material instead of unfolding it and placing the two cut ends together.

Cutting Dress.—Cut all around the edges of a commercial or draped pattern, but allow seams beyond the edge of a drafted pattern. For skirts, allow one and one-half inches on length seams, one-half inch at waist, and the hem plus one-quarter inch turn at the bottom; for waists, one inch on underarm and shoulder and all length seams; one-quarter inch at neck and arm's eye; allow one inch for turning at center back or front where waist fastens; also one inch on length seams of sleeve, and one-quarter inch top and bottom.

Marking Seams.—Use tailor basting to mark seams of wool dresses or trace on chalkboard; also for marking tucks, plaits, edges of panels, lines on which trimmings are to be placed. Mark notches with a few small running stitches. In marking plaits it is well to use two colors of thread, one to indicate the folded edge of the plait, the other to indicate the point to which the plait is to be folded over. Be very careful to place a line of basting to indicate center front and center back of both waist and skirt. These aid in pinning the garment together for fitting and also in seeing whether the skirt and waist hang evenly. They are good guides for measurements when fitting and making alterations. Observe great care in marking seams, etc.

Basting Skirt and Waist for Fitting.—If the material upon which you are working frays badly, overcast the edges roughly to keep them in good shape while working. Stay all bias edges, open necks, plackets, etc., with narrow strips of cambric one-quarter inch, to prevent stretching while fitting. Lay these strips flat on the edge of the material and baste with long stitches, being careful not to stretch the bias while placing the stay.

Pin the pieces of the skirt and waist together according to the notches. Observe the general rules for basting skirts and waists keeping in mind that most woolen material stretches very easily and therefore must be carefully handled. If by any chance you may have been so unfortunate as to stretch a bias edge of your material, as for instance the neck of a waist, if you will first run a fine gathering thread through the edge and dampen the cloth thoroughly, you can shrink the edge to its natural size by using a warm iron to press it, drawing the fulness in, but not letting the iron rest heavily on the cloth, repeat dampening and pressing until it has all fulness shrunk in.

Baste the sleeves together for fitting, and collar also. If trimming is to be applied other than cords or pipings, it is well to baste and shape them for trial when the waist is fitted. It is safer to cut trimmings in muslin or cambric for fitting.

Fitting Dress.—The dress should be tried on before stitching, but little fitting should be necessary if a trial pattern has first been carefully worked out in muslin. If the skirt and waist are to be worn as separate garments, each should be fitted with a separate belt, the skirt to a piece of belting, the waist to a tape or belt of soft lining. Where linings are being used, the dress must be fitted over these and adjusted to belts and parts of the lining where needed, all such points being marked as soon as the dress is removed from the figure. If they are to be placed on the same belt as a one-piece dress, with a girdle as waist trimming, pin the skirt to the belt first, fit, and mark the line at the bottom correctly. Then place the waist on the figure, adjust the fulness to the belt after the manner of your design, look over the waist to see if any adjusting is needed. If so, place pins to indicate changes. Pin the sleeves to place. Adjust so elbow sets in elbow of sleeve and the inside seam of sleeve falls in the correct position; mark line of seam at top and points for gathers. Mark line at bottom. Note whether too large or too small. Indicate alterations. Place collar and trimmings also. Remove dress from figure, mark and baste alterations. Mark also on the belt or lining the points where seams of waist and skirt touch it, the line where the top of the skirt comes and where the waist gathers will come. Gather the waist or baste plaits if you have laid fulness in this way. Mark points at which you have placed the sleeve, collar and trimmings, with colored thread. Remove both skirt and waist from the belt or lining, if necessary to make alterations. Fit dress again when alterations are completed, make necessary re-adjustments, remove from figure and begin construction.

Making Skirt.—Use sewing silk to match material for stitching seams.

Placket.—Apply the principle of facing plackets that you have learned on the tailored skirt. Remember that your chief concern must be to keep the placket from being bulky, yet stay it so that in wearing it cannot stretch out of shape. If no outside stitching is used on the skirt, this must be omitted on the placket. Use

instead small carefully made running stitches to keep the upper side from turning out. Press the placket carefully before sewing the snaps to place.

Stitching Seams.—Follow the rules given for tailored skirts Heed carefully the rule for stitching seams with bias edges.

Finishing Seams.—Judgment must be used in selecting the best method of finishing seams of woolen dresses. The edges may be pinked where they will not fray, *i.e.,* challis, albatross, broadcloth. Overcasting may be used on serges or diagonals. In making up transparent woolen material, such as voile, which requires a silk slip or lining, it is better to bind the seams with bias strips of the lining if overcasting shows through. Baste the bias strips on and stitch with the seam. Trim seams to three-eighth inch and turn binding over and hem to stitching. The same method may usually be followed for both waist and skirt seams. Press seams before and after finishing. When pressing seams open, use small seam board so that only edge of seam receives the hard pressure of the iron. Then lay on flat board and press whole seam lightly, if necessary.

Laying and Finishing Hem.—The hem of the skirt may be laid and finished like that of the tailored skirt (Fig. 215), where the material is heavy, but where light weight woolen materials, such as challis and albatross are used, when the hem has been cut evenly, turn in the top one-quarter inch, baste and press; then gather the fulness in at the top and after basting this top edge to the skirt, blind-stitch the hem and press. Hems on voile are sometimes bound the same as the seams, and this binding blind-stitched to the skirt. When the skirt is cut on very flaring lines, a facing will be needed instead of a hem. Cut this according to the directions given on p. 263.

Finishing Skirt at Waist Line.—When the garment is to be made a one-piece dress, set the skirt to the belt on the line indicated in fitting, adjust fulness and stitch skirt to place. Cover raw edge with seam binding after the waist has been placed. The whole will be finished by the girdle or outside belt.

Skirt Braids.—When woolen skirts are cut very long and full, the lower edges need to be protected from the wear and tear of brushing stairs and floors. Use skirt braid for this purpose. There are two kinds manufactured, a worsted braid and one of mercerized

cotton. The latter is more satisfactory, because it does not mar the shoes as much as the worsted, although it may not wear quite as long. If the worsted braid be used, it should be shrunk before sewing to the skirt.

Placing the Braid.—Let the edge of the braid extend one-eighth inch below the edge of the skirt, baste to place. Sew one-quarter inch above the lower edge with running stitches and hem the upper edge to the skirt. Use Kerr's luster thread letter "A" instead of sewing silk, as it wears better. Join the braid in the center back, a plain seam, opened and the raw edges catch-stitched to keep them smooth.

Making Waist.—*Seams.*—When necessary alterations are completed, stitch the seams of the waist, clip to within one-quarter inch of the stitching at the waist line and two inches above and below, press open, and finish the same as the skirt seams, unless for some reason it is necessary to use some other finish. When stitching the seams of a kimono waist, baste a narrow strip of silk at the curve of the seam, and stitch with the seam. This will stay it at the point of greatest strain. Clip the seams at the deepest part of the curve to within one-quarter inch of the stitching. Round the corners of the notches just made. If the waist has a sleeve set into the armhole without fulness, the seam of the sleeve frequently is on a line with the underarm seam, in which case, first place the sleeve in the waist, then stitch underarm and sleeve seam in a continuous line.

Sleeves.—*Seams.*—Stitch and finish the seams of the sleeves the same as the waist. If the sleeve has two seams, notch the inside seam at the elbow, and two inches above and two inches below, to prevent it from drawing. Notch the seam of a one-piece sleeve in the same way. Round the corners of the notches and press the seams open. Use the small round seam board to slip inside the sleeve when pressing seams.

Placket and Facing.—Sleeves that fit snugly at the wrist should have the seam left open two inches above the bottom of the sleeve, to allow the hand to slip through easily. When the placket is finished, the upper side of the sleeve is folded back on a line with the seam and the under side is left open to serve as an extension. To face the sleeve, cut a bias strip of cambric, three-quarter inch wide. Baste this strip on the wrong side of the sleeve, letting the

outer edge come to the finishing line on the upper side of the placket and the bottom of the sleeve as far as the end of the placket extension. Place another strip on the wrong side of the extension. Turn the edge of the upper side of the placket and the lower edge of the sleeve on the finishing line; miter the corners, cutting away unnecessary material, and baste. Catch-stitch the raw edge of the sleeve to the strip of cambric. Press bottom of sleeve. If outside stitching is used on the waist, apply the same decoration to the sleeve. If stitching is not used, the catch-stitching will hold the cambric in place. To face cuffs, cut some bias strips of silk, one and one-quarter inches wide. First sew one strip to the right side of the extension, fold to the wrong side of extension without turning the edge of the cloth. Baste, and hem the other edge to the extension. Turn the edges of another strip of silk, and baste to the wrong side of the sleeve, letting it cover the raw edges of the sleeve and cambric. Miter it carefully at the corners. Blind-hem facing to sleeve. Use tiny snap fasteners, or hooks and silk loops, to fasten the placket.

Cuffs.—These may be cut by fitted patterns, from the material of the dress, or such as is used for other trimming. They are sometimes simply lined with soft silk, in which case the two right sides should be placed together, stitched one-quarter inch from the edge and turned, basted on the edge. Cuffs are sometimes stiffened with soft silk crinoline or canvas. In such cases cut the stiffening the size you wish the cuff finished. Baste material to this, turn the edges, baste, and catch-stitch to the stiffening. Baste lining to place and slip-stitch. Cuffs may be placed so that the right side of the cuff lies on the wrong side of the sleeve; baste and stitch seam; overcast the raw edges. Turn cuff up on sleeve and tack to place. Or, the cuffs may be placed on the sleeve in the position they will be when finished, letting the raw edge of the cuff come to the raw edge of the sleeve. A bias silk facing may be stitched to this edge, turned with the edge of the sleeve, so that the facing does not show at all. The upper edge of the facing should be turned, basted and slip-stitched to the sleeve. Another method, sometimes used, is to finish both sleeve and cuff and tack the latter to place.

The above principles of finishing may be applied when using frills or flounces of material to finish the sleeves at the wrist. Cordings and pipings furnish their own strip of bias for facing as well.

Ruchings or laces should simply be basted to place, so as to be easily removed when soiled.

Placing Sleeves in Waist.—Several methods of placing sleeves are here explained in order to meet the varying changes in the fashion and cuts of gowns. Sleeves that have fulness at the top, whether one- or two-piece, are usually placed after the underarm seam of the waist has been stitched. Gather the top of the sleeve where you have indicated when fitting it. Then, holding the waist so that the inside is toward you, place the sleeve according to the points made for the location when fitting. Pin to place, easing the plain part of the sleeve, so as not to draw the armhole; distribute the fulness at the top so that the greater amount will come to the top of the shoulder. Baste with small stitches, trim seam to five-eighth inch, and overcast the edges before stitching. Hold the waist toward you while basting the sleeve in place. If the sleeve has been carefully basted where there is much fulness, and overcast, the stitching can be done holding the waist toward you to secure a good line at the armhole. To some, this seems difficult. With plainer sleeves, the sleeve may be held toward you. The seam may be finished by binding with taffeta seam-binding, or better, a bias binding of thin, soft silk. This may be run on the outside of the seam, and turned to the inside of the armhole, and hemmed down. The seam of the sleeve may be tacked to the shoulder seam and in one or two other places if there is trimming to conceal the tacking. This prevents the sleeve from standing up at the top of the armhole.

Two-piece sleeves having no apparent fulness at the top should be placed much the same as the gathered sleeve, the small amount of gathers necessary to make the sleeve set well, being first drawn up to fit the armhole, the thread fastened, and the sleeve removed from the waist; the top of the sleeve laid over the end of the tailor cushion, thoroughly dampened and pressed until the fulness is shrunken out. Then place the sleeve in the armhole and stitch to place. Finish with binding of silk, and if outside stitching is used on the waist, lay the seam back, baste, and stitch down to waist.

One-piece sleeves without fulness at top are usually cut so that the seam is on a line with the underarm seam of the waist. These are placed in the armhole before the underarm seam is stitched. They are sometimes placed like the middy blouse sleeve (p. 302),

or may be stitched as a plain seam on wrong side, the raw edge bound with bias silk, and laid down and stitched flat, when an outside stitching is used on the waist.

There are two methods of finishing the armhole when one does not wish to have stitching show but wishes the sleeve to lie flat when there are gathers at the top. In either case the fulness should be drawn up to fit the armhole and the thread fastened and the edge of the sleeve bound. Either face the armhole with a bias strip of silk, five-eighth-inch finished, and sew the sleeves at the line of gathers to this, slip-stitching the very outside edge of the armhole to the sleeve, or else cord the armhole, blind-hem the edge of the silk to the armhole, and sew the sleeve to the facing where the cord is sewed in. Either of these finishes is attractive for challis, albatross, or other light-weight material, but requires the most careful handling.

Sometimes the armhole is finished separately and the sleeve, either a kimono or small close sleeve, set on the net or silk lining. In this case, it is best to face the lining beyond the edge of the sleeve with the same material to prevent the lining showing in the movement of the body. The armhole of the waist is (1) finished with a bias facing of silk. Baste right side of facing to wrong side of waist, stitch, turn edge far enough so facing does not show; baste, and slip-stitch to waist or turn edge of facing, sew to itself, tacking to waist occasionally; (2) on the edge may be corded.

Finish of Front of Waist.—The front of the waist is sometimes finished with a hem on each side. Place a strip of cambric or silk inside the hem to make it firm for sewing fasteners on. This may be placed as in finishing a placket (p. 335) for a skirt. Stay the under side for an extension. Do not turn edges of cloth in on the front of the waist. Pink them, if they do not fray; overcast or bind with soft silk when they do fray. Stitching may ornament the front of the waist, or be omitted. When the stitching is omitted, unless buttons or other ornamentation is used, it will be necessary to hold the hem in place by a row of small running stitches. These will scarcely show when pressed. Take a longer stitch on the wrong side of the waist than on the right. Use snap fasteners, hooks and eyes, or buttons and buttonholes to fasten waist and trimmings. For a curved neck line, cut a facing the same grain as the part of the garment being faced.

Collars.—If fashion has declared in favor of the freedom of open necks, the collar may be large or small, flat or rolling; or it may be high, standing close to the neck in the back, or flaring away from it. The flat or rolling collar may be made entirely of the material of the dress, or silk, satin or velvet; or the under part of the collar may be made of the dress material and the upper part of silk, etc. The high standing or flaring collar is usually better looking if the outside is cut in one with the waist; this is not always possible. One can readily see, however, the beauty of this unbroken line through the back of the waist. This collar is better lined with silk or satin, both for comfort and appearance.

When high-neck closings are in vogue, close-fitting collars of net, lace, ribbon or velvet, attached to the vest or guimpe, may be used. These may fasten either in front or back. A high close-fitting collar of the dress material is sometimes worn on a waist that fastens up to the neck in center front or back. Such a collar should have a lining of soft silk to prevent irritation of the skin.

Making Collars.—Use the pattern you have designed and fitted in muslin, or a fitted commercial collar pattern.

Flat or Rolling Collars.—Cut by drafted, draped, or commercial pattern two pieces of material such as you have chosen for the parts of the collar. The upper part should be cut one-sixteenth inch larger than the under, in order to prevent the under side from rolling up when the collar is being worn. Place the right sides together, baste, stitch one-quarter inch from the edge; trim the corners diagonally to prevent thickness, turn to the right side and baste around outside edge. Place the center of the collar to the center of the neck, pin to place, holding the neck of the waist easy. This preserves the roll of the collar and keeps the neck of the waist from spreading open. If for any reason the neck may have become stretched, run a gathering thread through it between these points, draw the thread up, fasten, and then shrink the fulness out. Baste a narrow facing to the collar and neck of the waist and stitch this with the collar. Turn the facing over on the waist, baste the outer edge to hold it smooth; turn and baste the inner edge, and either slip-stitch or machine-stitch to waist. This facing may be of silk or satin cut crosswise if very narrow, one-half-inch finished, or same grain as waist. If bias facings are used, stitch a straight strip of silk on the under side of the seam to pre-

vent the seam from stretching. If one wishes to wear separate collars entirely, the neck of the waist need only be faced and the collar basted to place each time it is changed.

The high-standing, or flaring, collar should be cut and made like the former, except the collar stays are usually set on the collar before turning it right side out, after stitching the two pieces together. The flare is sometimes supported by the use of canvas or other stiffening as an interlining. This must be somewhat soft in finish or the lines of the collar will seem stiff and rigid. This collar may be placed and finished as the one above.

The high, close-fitting collar, if of net, lace or ribbon, should be made as described under Net Guimpes (p. 381). If the collar is made of the dress material, it should be cut from a fitted pattern. If to be bound with braid in one with the waist, do not allow seams at the top or right-hand end. It is well to baste a bias strip of thin cambric or taffeta along the edge, to make it firm for sewing the braid to place. If the collar is to be stitched at the top in keeping with other stitching on the waist, or otherwise trimmed, the upper and lower edges should be turned to wrong side and basted; also the right-hand end. Place a bias strip of cambric along the line of the turning, and turn edges over this. If the collar is to be trimmed with folds, or braid is to be applied, all this should be done before the lining is put in. Press carefully. If hooks are used as fastenings, these should be sewed to place before lining is put in. Cut lining of silk or satin cross-wise. Turn edges in, baste to place, and hem to collar. Stays would be better placed under the lining so that they may not cause friction. Use buttonholed loops instead of eyes for fastening. Do not turn in left-hand end of cloth. Let lining bind it over, to prevent thicknesses. Bind the neck of the waist with seam binding, place collar and sew to neck of waist.

Trimming.—All trimming, such as revers, folds, cords, braids, passementerie, etc., should be basted to such places as are indicated in fitting the dress, but these should not be sewed until after the final fitting. Braiding in design, if placed on the body of the dress, should also be worked out before the dress is finally put together. When using such on collars, cuffs or revers, the outline of these should be marked on the material from the fitted pattern of each and the braiding done before the pieces are lined. The same is true of designs embroidered in coarse silks or worsteds. All bands and folds

should first be basted, then slip-stitched to the dress. Revers may be set on the front edge of the waist and finished as you would the flat or rolling collar. Vests are sometimes set into the waist or on the net or silk lining. They can be sewed by hand to the edge of the waist, or catch-stitched to the net lining.

Finish of Waist at Bottom.—Any one of the following methods may be employed where best suited to the particular type of dress.

1. Adjust the fulness of the waist to the belt, and stitch the waist to place; trim the material away, one-quarter inch below the stitching. Set the top of the skirt, already finished plain, with a cord or piping, on this stitching, baste, and sew to place by hand or machine, as the finish of the skirt may require.

2. If a belt or girdle is to be worn, the edges of the skirt and waist may be just brought together on the belt, stitched, and the raw edges covered with taffeta seam binding.

3. The waist may be finished as a separate waist, to be worn inside the skirt. In such case use any suitable finish for shirtwaist Place the skirt on a separate band, finishing for a normal or raised waist line.

4. Should the bottom of the waist fall outside the skirt waist line, as in a basque, tunic or peplum, it must be finished with a facing extending from one inch to two inches above the edge, or lining throughout if needed. If the lower edge of the skirt piece is straight, it may be hemmed, using Prussian binding to finish it. In either case, place the right side of facing or lining to the right side of the garment, baste to place, stitch, turn so that facing will not show from right side, baste on turned edge, turn upper edge in and slip-stitch to garment. Press carefully. Facings for such problems must often be fitted to the lower edge of the garment before cutting. Bias facings, unless narrow, do not always fit. All trimmings, such as bands, braids, etc., should be applied before the waist is faced.

SUGGESTIVE QUESTIONS

1. What materials are suitable for making a tailored skirt of wool?
2. What materials and trimmings would you suggest for making a school or street dress of wool?
3. What should you consider in planning your design?
4. Would you make up ready-sponged material without further testing?
5. What is the difference between the placket finish on bias seams of linen and wool skirts?
6. How would you finish the seams of the waist and skirt of a wool school dress?

CHAPTER XX

OUTER-GARMENTS: SILK DRESS, BLOUSE, GUIMPE

SILK DRESS FOR AFTERNOON WEAR

Suitable Materials	*Trimmings*
Taffeta.	Lace.
Pongee.	Net.
Faille.	Braid.
Crêpe de chine.	Self-trimming.
Crêpe meteor.	Fringe.
Satin.	
Messaline.	
Foulard.	
Silk poplin.	

Planning the Dress.—With the exception of a few details of construction, the same principles employed in making a wool dress enter into the making of a silk dress. In designing the dress, there is the same need of feeling for color, lines and form; the same economic principles enter into the purchase of the materials, the same question of wearing qualities, and cost. The choice of a silk dress would suggest the use of chiffon laces, nets, velvet, braid, or self-trimming, unless its finish were to be strictly tailored, when stitching might be used for ornamentation.

Depending upon the type of dress to be made, it may or may not need a net or silk underbodice or drop skirt. Directions for making these are found on p. 383.

Cutting Dress.—The dress may be developed from a drafted, commercial, or draped pattern. If you wish to drape the dress, working directly with the material itself, follow suggestions given for draping (pp. 170–173, 177–178). When cutting silks, consideration must be given to figures, stripes, plaids, changeable colors, and twills (pp. 27–30, 358–392). Otherwise the general rules for cutting should be observed.

Marking and Basting Seams.—Silk seams may be tailor basted or traced slightly on the chalk tracing board. Never trace them on a hard surface, as this will often cut the threads. The texture of silk gives it a tendency to slip and slide, hence great care must be exercised in pinning and basting seams. Use fine cotton or silk for soft silks, and if there is the slightest tendency to mark the surface, use needles or the best steel pins for pinning seams and parts of dress.

Stitching and Finishing Seams.—Judgment must be used in regard to machine stitching on silk dresses. Sometimes it is impossible to make good-looking seams by machine on some of the soft silks. Where the question of expenditure of money or time does not enter too seriously into the question, hand-run seams frequently give the best satisfaction. In hand sewing on silk, be careful not to draw the thread tight; use a combination stitch (two or three running stitches and a backstitch). If machine stitching is used, be careful to have an easy tension. Test carefully before stitching seams.

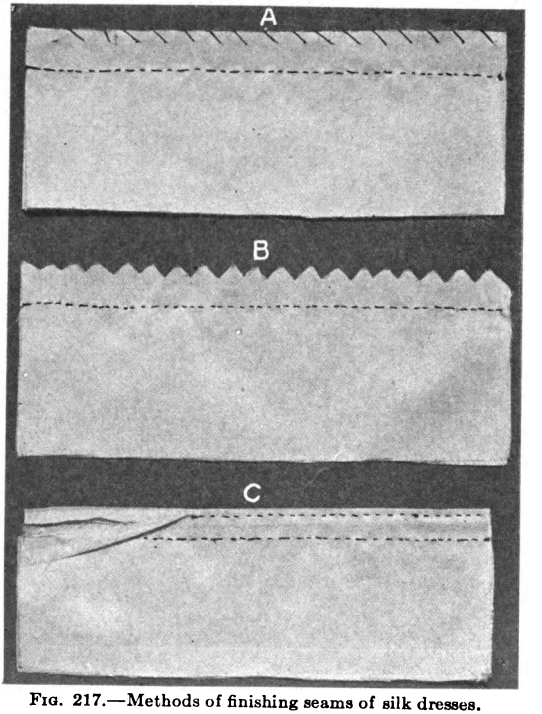

FIG. 217.—Methods of finishing seams of silk dresses.

Any one of the following methods may be used for finishing the seams, selecting the one best suited to the material, and other treatment of the dress:

1. Trim and overcast raw edges, pressing seams open or keeping them together (Fig. 217*A*).

2. Edges of silks that do not fray (taffeta, etc.) are sometimes pinked (Fig. 217*B*).

3. The edges may be turned in toward each other and run (Fig. 217*C*).

4. The edges of seams may be bound with seam binding, either singly or together (Fig. 218*A*).

5. The seams may be pressed open, the edges turned back on themselves and run (Fig. 218*B*).

Plackets.—Apply the principles already learned, remembering that the secret of success lies in the careful staying of bias edges and avoiding thickness.

Hems.—The edge is usually turned in, unless silk is heavy. In the latter case, Prussian binding may be run on the edge of the hem, holding it easy, and the edge of the binding slip-stitched to the skirt. Circular, or draped, skirts will need to be faced, or hem treated as suggested for wool skirt, p. 363.

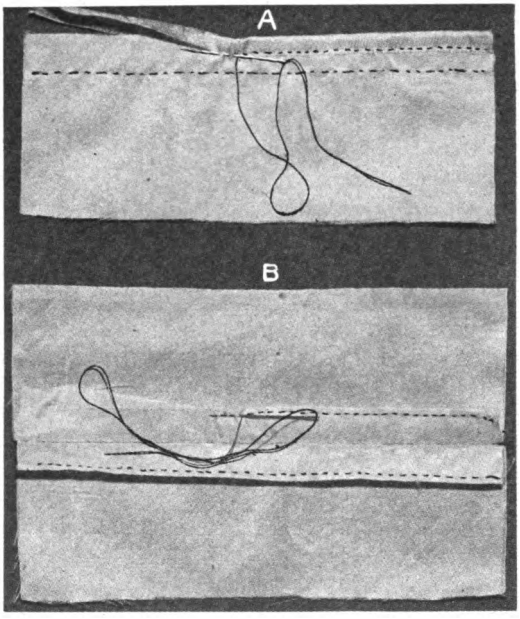

FIG. 218, *A*, *B*.—Methods of finishing seams of silk dresses.

Pressing.—Silk requires the utmost care in pressing; do not press except where necessary. In pressing seams, draw them over the face of a moderately warm iron. This will usually press them sufficiently to make them smooth, without marring the softness of the fabric. When necessary to press seams open, or in pressing hems, use a soft cloth under the silk. Two or three thicknesses of outing flannel or an old blanket make a satisfactory surface for pressing silk. The iron must not be hot; nor must it be pressed hard on the silk.

SEPARATE BLOUSE OF LACE, NET, CHIFFON OR SILK

Net, lace or chiffon blouses should be made over linings of net or chiffon, cut on the same or closer lines than the blouse itself. Under this should be worn a net or silk underbodice simply trimmed. The blouse may be designed on the lines of any of the good models of the day.

Seams.—French seams, machine hemstitching or fagoting may be used.

Decoration.—Hemstitching, fagoting, embroidery in silk or worsted, and beads make attractive trimmings. Strive to use just that which will give a distinctive note to the blouse.

Fastenings.—The same as for other garments, snap fasteners, and hooks and eyes.

Silk Blouse.—The treatment of such should be practically the same as that of the waist of an unlined silk dress. It may be finished at the waist with (1) a peplum, (2) a band finished to the waist measure, (3) cut longer by several inches, and a casing stitched near the bottom, through which an elastic can be run.

Guimpes are here classified under two heads:

1. The soft underwaist, with long or short sleeves, high or low collar, for wear with sleeveless overblouse or other material.

2. Guimpe of net or lace, with high, close-fitting collar and yoke, cap sleeves for shields, to be worn with silk or wool dresses.

The first type of guimpe need not claim our attention at present, because it should be constructed on the same principles as a lingerie waist or chiffon blouse.

Net guimpes with close-fitting collar. This may be made in one of two ways:

1. **Draped Guimpe.**—If one has a dress-form padded to fit her figure, the better method would be to work directly on the form (Fig. 219).

To Drape Front.—Measure strip of net from one edge, wide enough to reach from underarm seam to underarm seam, and allow one-inch tuck on each side of guimpe. Fold through center of strip and run a colored basting through this. Place this line to center front of form; allow sufficient material at top to give shoulder seams. Pin to place through center front. Slash through net at front, above neck to permit stretching across chest and around neck; stretch tight across chest; cut away material one-half inch above neck. Keep net smooth across chest, lay in one-half-inch tuck inside armhole; sew tuck, run from shoulder about four inches. Trim out armhole, allowing plenty of seam here and at shoulder. Adjust fulness at waist; pin back of underarm seam.

To Drape Back.—Fold one inch back on one edge of net; baste. Place on left-hand side of back, letting one-half inch extend beyond center. Pin to place, stretch net across back; pin shoulder seams;

trim around armhole, allowing seams; adjust fulness at waist, and pin underarm seams. Cut extra material away. Fold back one inch on other edge of net; place folded edge to center back, and proceed as with the other side. Pin linen tape or Prussian binding to guimpe at waist line, distributing fulness as needed; draw net down tight. Mark neck line with colored thread. Sew shoulder seams on form, finish as fell on right side. Baste underarm seam on form also.

FIG. 219.—Net guimpe, showing cap sleeve collar, back and waist finish, the material of guimpe having been cut away under yoke.

To Drape Yoke.—Mark the center of the piece of net or lace intended for the yoke, after having marked off a strip large enough for the collar. Yokes are stretched usually without seam on the shoulder. With the net lengthwise in the center front, the back will be somewhat bias. This can be stayed with a straight piece of net

later on. Stretch the yoke very carefully, and cut the neck out with the greatest care, so as not to have it fall short at any point. Pin closely and baste on form, to hold it in place.

To Make Collar.—Use the cardboard model of collar which was prepared when fitting tight-fitted waist lining for padding form. Cut strip of net lengthwise, one and one-half inches longer than collar and one inch deeper. Turn one-quarter inch on one edge, baste. Colored basting through center. Stretch lower edge of collar along cardboard, keeping center of net to center front of collar. Stretch and pin to cardboard. Colored thread for lines for extenders. At right hand end, fold net even with edge; at left hand end, let it extend one-half inch for facing. Baste collar extenders to place, top and bottom, before taking from cardboard, using lines on board as guide for direction (Fig. 82*C*). Remove from cardboard, pin to neck line of guimpe. Baste after removing from form.

Sleeve.—May be draped over padded arm or cardboard. Seam may come directly underarm or as shown (Fig. 82*A*). Baste sleeve, place in armhole. Try guimpe on. Alter if necessary.

To Finish.—Underarm (French seam); hem bottom of guimpe and sleeve. Sew waist tape by machine. Plain at armhole, bind with net, or finish as stitched fell.

To Cut Out Yoke.—Remove bastings at neck, stitch at a time; put finger between outside and lining and re-baste collar as you rip. Remove extenders. Hem collar with No. 120 thread, from right side of neck, trim edge on wrong side to one-eighth inch and whip down so that it looks as if rolled; overcasting stitch gives better result. Turn in the lower edge of yoke and sew it with fine running stitches. Then cut the under side of the lining away, following the line of the yoke, but allow one inch beyond the sewing line on the edge of the yoke. Clip the edge of the lining, turn in one-quarter inch, and finish the same as the yoke.

The edge of the top of the collar may be turned in, and Irish picot with points turned down, sewed to it, or Irish ladder may be sewed to the edge, the top of the collar being cut lower to accommodate the lace. Sometimes rat-tail braid is rolled and whipped into the edge of the collar to finish it. Narrow little lace braids make attractive edges for such collars. Lace braid, narrow footing, or net, may be used to face the extensions on the yoke and collar, and also the edge which is turned back. Hem the sides of the guimpe, one-half-inch hem. Use small hooks and thread loops on

yoke and collar, and snap fasteners on guimpe, except at waist, use one large hook and eye.

2. **Guimpe from Shirtwaist Pattern.**—When one does not have a dress-form, a net guimpe may be cut from a shirtwaist pattern. Cut net lining by fitted pattern, mark center front with colored thread, stitch shoulder seams. Run thread around neck to keep it from stretching. Place lining on one for whom it is being made, and drape outside on lining as on dress-form; fit collar; drape sleeve on cardboard form; or lay out flat on cutting board and pin carefully, so that it is very smooth, but not stretched to one side or the other. Mark material for yoke through the center, as in other guimpe. Pin center of yoke material to center of lining, and smooth across, pinning to place as it is stretched across. Work carefully. Pin it closely, remove pins that hold lining to board and baste yoke material to lining, following line at lower edge indicated by pins. Trim out guimpe under yoke, allowing very generous seams. Run a thread around neck line of yoke, making it a little tight (wind thread around pin) so it will not stretch when you try guimpe on. Cut and baste sleeve, and place in armhole. Cut strip for collar two inches longer than needed and one inch deeper. Fold one-quarter inch on one edge and baste. Try guimpe on. See if neck line is good. Then pin collar to place, center front to center front. Stretch collar as much as seems necessary to make it smooth. Pin it up the back, and the clip at top, and trim line as low in front as desired, and raise back of ear, then lower to center back. It is rather difficult to turn this line, but it can be done nicely if plenty of time is given to it. The collar can be made the same as for draped guimpe over cardboard. Pin waist belt to place. When removing guimpe, be careful to mark the line on back of collar with pins, also back of yoke.

To Finish.—Follow the directions given for other guimpe above.

SUGGESTIVE QUESTIONS

1. What should be considered in designing a silk dress for afternoon or street wear?
2. What materials and trimmings are suitable for making a simple silk dress?
3. How would you finish the seams of a silk dress?
4. In what two ways may net guimpes be made?
5. How would you sew the collar on a net guimpe; finish the ends and top?
6. For what purposes is a silk dress especially suitable?
7. What is the average cost of a good taffeta silk per yard?

CHAPTER XXI

OUTER-GARMENTS: FOUNDATION SKIRTS, WAIST LININGS

Foundation skirts, or drop skirts, as they are sometimes called, are used for dresses with long tunics, skirts made entirely of flounces or ruffles, or for draped skirts.

Suitable Materials	*Findings*
Silk.	Thread, cotton, silk.
Satin.	Belting.
Suissine Silk	Hooks and Eyes.
Percaline.	Snap Fasteners.
Lawn.	
Net.	

This type of skirt may be cut from any type of pattern, gored or circular. If the outer skirt is of sheer material, care must be taken to select a pattern for the foundation that will not have too many seams, nor in such position as would mar the lines of the outside skirt. Buy material best suited to the material of the dress. Cut the foundations as long as will be needed; when a tunic is to be used, the foundation may be cut as much shorter than the finished length as you plan to use the dress material above the bottom, allowing enough for finishing. It may be cut full length, allowing for hem, if the skirt is to be made of ruffles, or in the same way as for a tunic. In cutting for a draped skirt, it must at least be long enough to catch the lowest tacking of the drapery. For such purpose they are sometimes cut full length or with train, and trimmed at the lower edge with plaitings of lace or chiffon. Buy the necessary quantity of material, cut, baste and fit skirt, according to directions already given.

Seams.—Finish seams with stitched fell or French seams, preferably the former because they are smooth. In many dresses a plain seam overcasted is sufficient. When facing of material on right side is used (as for tunic), turn the edges of the material in on the right side, to the drop skirt, and on the wrong side, turn the bottom of the drop skirt in to the facing. Stitch both edges. The drop skirt should be finished with a continuous placket; then hung and stitched to the belt at the normal waist line.

WAIST LININGS

Suitable Materials		*Findings*
Net China Silk. Suissine Silk	Protection Linings	Cotton Thread. Sewing Silk. Belting. Snap Fasteners. Hooks and Eyes.
Corsica Silk Taffeta Silk Percaline	For tight-fitted linings.	Same as above, also Prussian binding, Taffeta seam binding, Whalebone, or Featherbone.

Protection Linings.—These are used in silk or wool dresses, which are not closely fitted, to protect the dress material across the shoulders, and also for holding shields. The sleeves of the dress may be set on this lining. Being attached to the belt, they hold the dress in correct position, if one desires to wear garments that are loose about the waist (Fig. 220).

To Make Lining.—Calculate the quantity of material of the kind you have selected necessary for making, and purchase the same; also the findings. Cut from a fitted shirtwaist pattern or drape upon a form, having only underarm and shoulder seams, and a slight fulness at waist, in front and back. Cut either a small cap or long sleeve as you may desire, or make without under-sleeve. The lining may be opened either front or back. Cut waist all the way to the neck, else it will drag down and be too low when finished. The line at the neck can be marked when the waist of the dress is fitted.

Seams and Finishings.—Use stitched fells to finish seams of waist; a plain seam at the armhole, bound with taffeta seam-binding, and a narrow hem at the lower part of the sleeve. The neck may be faced and edged with narrow lace, or the edge simply turned back, the lace set on it and stitched to place.

Belt.—The belt may be of webbing, darted so as to make part or all of the belt come above the waist line (Fig. 216). A circular belt, made of soft material and boned, is used for garments that hang in straight lines from the figure, in loose-fitting fashion. Place lower part of waist at center of width of belt, adjust fulness, try on, then stitch. Use snap-fasteners on waist, hooks and eyes on belt.

Tight-fitted Waist Lining.—Proceed with this lining in the

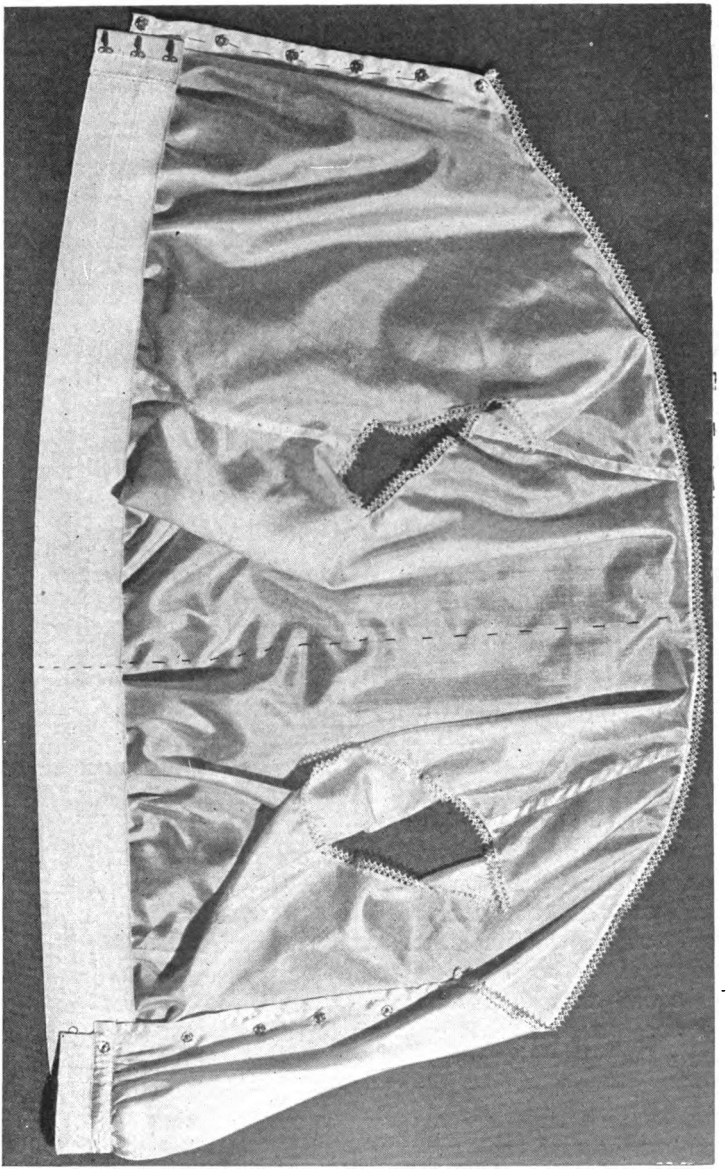

FIG. 220.—Semi-fitted waist lining, showing front, neck and belt finishings.

same way that the lining was prepared for the form (p. 162). When cutting lining, cut additional pieces, the same grain as lining, one inch below, three inches above waist line, one center front, side front, and back of waist. Pink upper and lower edges of pieces and baste on wrong side of waist pieces and into seams. These reinforce a waist at the point of greatest strain. The lining for the form was carried to the point of stitching, notching and pressing seams (Fig. 221).

Finish of Seams.—After pressing the seams open on the small seam-board, they may be finished in any one of the following ways:

1. Bind with taffeta seam-binding. Fold binding a little less than through the center, crease. Place over edge of seam, so that the wider edge is on the under side of the seam; hold the binding easy. Sew with small running stitches, folding the binding in as the notch is turned, so as not to have a clumsy appearance (Fig. 218*A*).
2. Turn edges of seams back on themselves, and sew with running stitch (Fig. 218*B*).
3. Overcast edges (Fig. 217*A*).
4. Pink seams (Fig. 217*B*).
5. Stitched fell (Fig. 121).
6. Turn edges together and run (Fig. 217*C*).

Boning.—Use whalebone if you wish a soft, thin finish to the waist, but as it is expensive if good qualities are bought, many prefer to use featherbone, which is very satisfactory, its only disadvantage being its thickness. The great advantage of featherbone is the short time it takes to put it in, and its unbreakable qualities. Metal and composition stays are also used in place of whalebone.

Whalebone.—First mark on the seams the height you wish the bones. This varies with different figures, an average being five to six inches in center back above the waist line; three-quarter inch lower on side and underarm seams; in the front, depends upon the height of the bust. Below waist, one to two inches, or so, end of bone does not show through dress. Casings of Prussian binding for the bone must first be sewed to the seams of the waist. Turn the end of the casing over one inch and overhand both sides. Crease casing through center; lay this over center of seam; begin three-quarter inch from top of casing to sew to seam; hold quite easy, sew to seam with small running stitches, down one side, up the other,

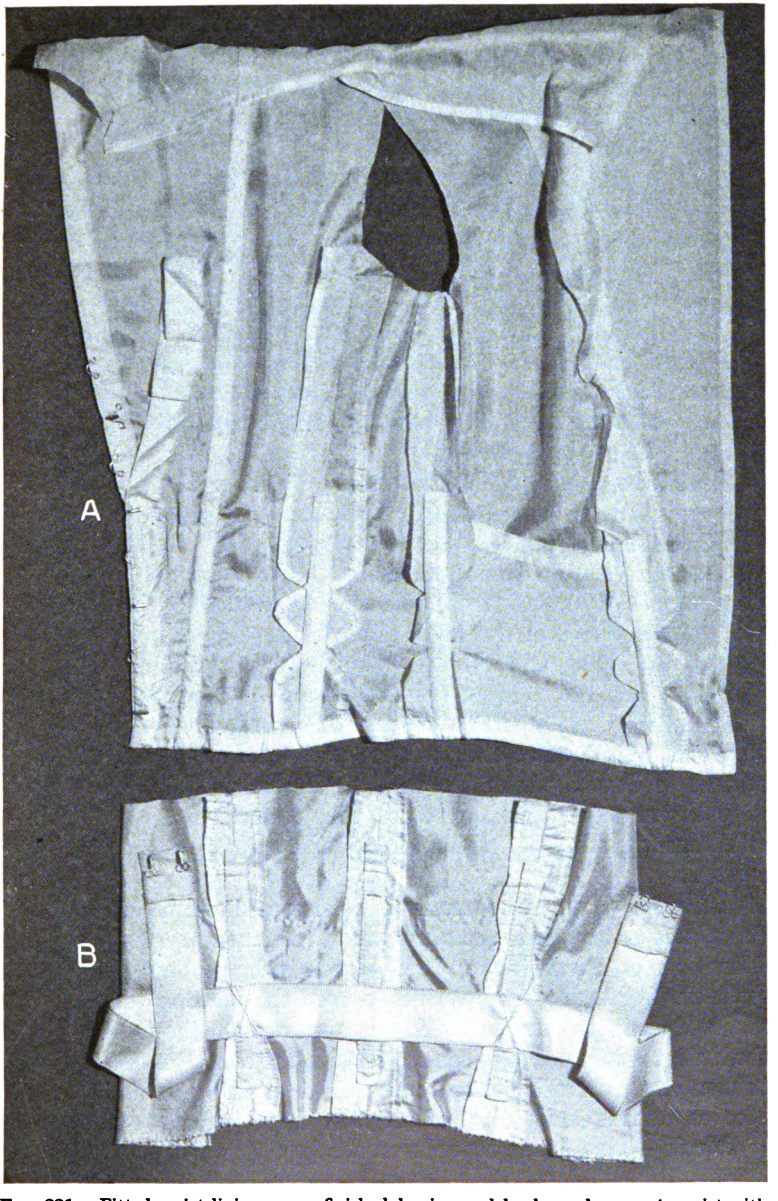

FIG. 221.—Fitted waist lining, seam finished, boning and hooks and eyes; *A*, waist with several seam finishings, featherbone; *B*, waist with whalebone and inside belt.

leaving bottom open; cut off here, allowing some for finishing. A casing for book and eye is made in lining where waist fastens. Stitch one-eighth inch from turned edge of waist, and again, the width of the bone, allowing a thread or two, so the bone will slip in easily; stitch across top of casing.

Soak whalebone in cold water for an hour or two before using. Remove bones from water as you are ready to use them, cut bones length of casing, round off the corners, slip this end into casing, letting it stop one-half inch short of the top. Sew right through bone, and tack to casing. Tack again half way down seam, springing bone slightly. Trim off lower end to correct length, spring, cover with loose end of casing, not letting bone come to end of casing. Tack to seam, and overhand sides of casing. Place hook and eye bone in same way, tacking bone below top of casing to prevent its pushing through.

Featherbone is sewed to the waist by machine; no casing is used, as the bone comes already covered.

Hooks and Eyes.—Use No. 4 "Swan-bill" hooks and eyes, alternating them in sewing them on. Sew them one inch apart from bottom of waist to bust, and one and one-half inch above this. Let the outer end of the hook come to one-eighth inch from the edge of the waist, and the eye just "peep" over the edge. This will just bring the edges of the waist together when fastened. Sew them on firmly, fastening the sewing with a buttonhole stitch. Tack the hooks at the outer end, and the eyes across the outer curve, to hold them down. Cover the ends of the hooks and eyes and raw edge of the waist with a piece of wide taffeta seam-binding; sew with running stitches. Spread hooks and eyes apart before sewing them on.

Sleeves.—Finish the seams of the sleeves the same as the waist. Baste sleeves to place according to directions, p. 168. Try on. When correct, stitch, trim to three-eighth inch and bind with taffeta seam-binding, being very careful to keep the binding very easy, so as not to draw the armhole. Either bind or hem the lower edge of the lining, if it is not to be connected with the outside sleeve. Finish bottom of waist with hem, overcasting or pinking as it may need. Sleeves are frequently made of net; also the upper part of the waist.

Neck.—This finish depends on the type of waist made over the

lining. If a heavy dress or high in the neck, seam-binding may be used, or the edge finished with lace.

For Evening Gown.—Sometimes the upper part of this lining is omitted and the top made of net, tulle, chiffon, moussiline, etc. In this case, the top of the lining should be finished with a facing through which rat-tail braid or ribbon can be run to draw and hold waist tight; narrow lace may be used to edge the top, under the net or chiffon.

Belt.—A webbing belt, one and one-half inches wide, should be cross-stitched to the center back, or if waist fastens in back, to the center front seams, the bottom of the belt one-eighth inch above waist line to hold waist down well at point of strain (Fig. 221*B*).

SLIPS

Suitable Materials	*Findings*
Batiste.	Thread, cotton, silk.
Lawn.	Hooks and Eyes.
Messaline.	Snap Fasteners.
Figured Taffeta.	Linen Tape.
Lining Satin.	
Net.	

Linings in one piece, cut from princess pattern, or waist and skirt joined on belt, are frequently used for wear under sheer summer dresses. Flowered silks are attractive under organdie dresses, and quite in keeping with the material. Some of the lining satins make attractive slips which will last a season, and are very inexpensive. The slip can be made very attractive by cutting the upper part of the waist of fine net, and finishing it with rat-tail braid at the neck. If the net is crossed in the front instead of ending abruptly, it softens the finish and prevents any possibility of the edges of corset cover trimmings from showing above the dress in an unhappy way. This arrangement can easily be accomplished when the slip is cut from princess pattern: Cut it so as to open in center front; then cut an additional front piece on a fold in the center. Stitch this into the seam on the right-hand side of the slip and fasten with snap fasteners to the opposite seam. This will allow the net top to cross in surplice fashion. The same effect can be secured on a slip cut from shirtwaist and skirt pattern. An additional piece may be hemstitched by machine to one side and the edge hemstitched and snapped down with very small snaps on the other side of the waist, and the band at the waist cut longer so as

to hook it over with the skirt. In this way the net could carry over just as in the princess slip. For slight figures the slip cut from waist and skirt pattern and joined at waist is very satisfactory, as it gives more fulness than the princess. The latter is better for stout figures, but should be easy in fit.

Seams.—French seams are usually better because they do not show through the outer-garment.

Sleeves may be added if wished, to place shields in; or the armhole may be finished with dainty lace.

Skirts may have the lower parts trimmed with flounces, cut circular if of silk, or straight and gathered if of washable stuffs. The skirt should be cut long enough to allow for finishing when flounce is joined to it. Stitch flounce to skirt with seams on wrong side, turn edge of skirt over on it and hem down (if skirt of silk). Cotton skirts may be finished in any acceptable petticoat fashion.

SUGGESTIVE QUESTIONS

1. Name the several types of linings, slips, etc., that may be needed in making dresses of silk or sheer materials; for tunics, draperies, etc.
2. What materials are used in making the above?
3. Describe the finish of one type of such part of a garment.

CHAPTER XXII

DECORATION—SELF-TRIMMINGS

Self-trimmings denote the use of the material of the garment itself in some manner of decoration; it may be in any one of the following forms:

Pipings.	Plaitings.
Bindings.	Bound Buttonholes.
Folds.	Buttons.
Cordings.	Pockets.
Shirrings.	Reversed Hems.
Tuckings.	

Bias Cutting.—Since a number of these trimmings require the material to be cut on a true bias, it may be well to review bias cutting in relation to dressmaking. Fold material so that the warp threads are parallel with the woof threads, but when cutting bias strips of diagonal or twilled materials, for folds, bindings, or pipings, observe the following rule: Fold the corner of the material toward which the twill runs, so that the twill will run across the bias strip instead of lengthwise, as the latter mars the effect in both weave and color (Figs. 222 and 223). Measure at right angles to the fold, depth desired for the bias strip. Do this at several points along the strip, and mark with pins or chalk. Cut through these marks on both thicknesses; also through fold. Repeat, measuring from cut edge of material until enough strips have been cut to serve your purpose. Join bias strips by hand or machine, as seems best for the material, letting ends extend (Fig. 222*B*). Do not remove selvedge unless very heavy. Clip if necessary. When cutting bias strips from twilled material be careful to cut them correctly as regards the twill which should run at right angles to the bias edge (Fig. 223*A*). In calculating quantity of additional material necessary for trimming of the same, or another kind, the following table will prove a help in making calculations.

Table of Measures Showing Length Along Selvedge when Width of Bias Strip is Given.[1]

When the width of a bias strip is	The length along the selvedge is	When the width of a bias strip is	The length along the selvedge is
inches	*inches*	*inches*	*inches*
0.5	0–6	6.5	9–1
1.0	1–3	7.0	9–7
1.5	2–1	7.5	10–5
2.0	2–6	8.0	11–2
2.5	3–4	8.5	12–0
3.0	4–2	9.0	12–6
3.5	5–0	9.5	13–3
4.0	5–5	10.0	14–1
4.5	6–3	10.5	14–7
5.0	7–1	11.0	15–4
5.5	7–6	11.5	16–2
6.0	8–4	12.0	17–0

The number after the dash represents the number of eighths of an inch, *e.g.*, 26–7 means 26⅞ inches.

When the width of cloth is	The length of a true bias strip is	When the width of cloth is	The length of a true bias strip is
inches	*inches*	*inches*	*inches*
18	25–4	40	56–5
19	26–7	41	58–0
20	28–2	42	59–3
21	29–6	43	60–6
22	31–1	44	62–2
23	32–4	45	63–5
24	33–7	46	65–0
25	35–3	47	66–4
26	36–6	48	67–7
27	38–1	49	69–2
28	39–5	50	70–6
29	41–0	51	72–1
30	42–3	52	73–4
31	43–7	53	75–0
32	45–2	54	76–3
33	46–5	55	77–6
34	48–1	56	79–1
35	49–4	57	80–5
36	50–7	58	82–0
37	52–3	59	83–3
38	53–6	60	84–7
39	55–1		

[1] By permission of Professor Clifford B. Upton, Teachers College, Columbia University.

Pipings.—Pleasing effects may often be secured through the use of contrasting colors or striped materials, in the form of pipings which show just a line of color beyond the edge of the garment.

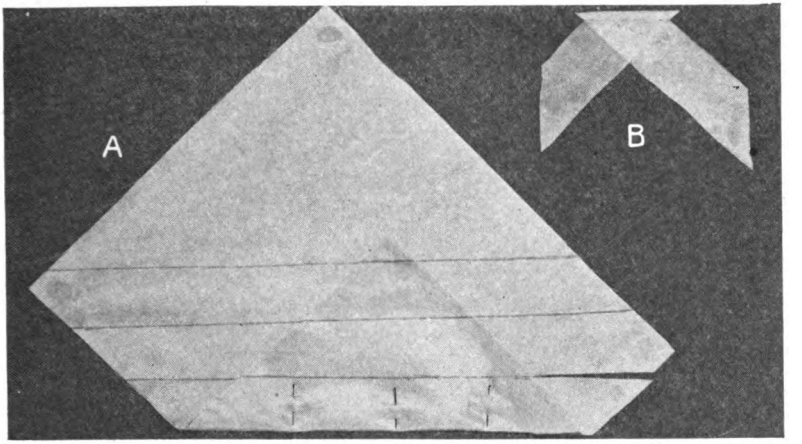

FIG. 222.—*A*, true bias cutting; *B*, joining bias strips.

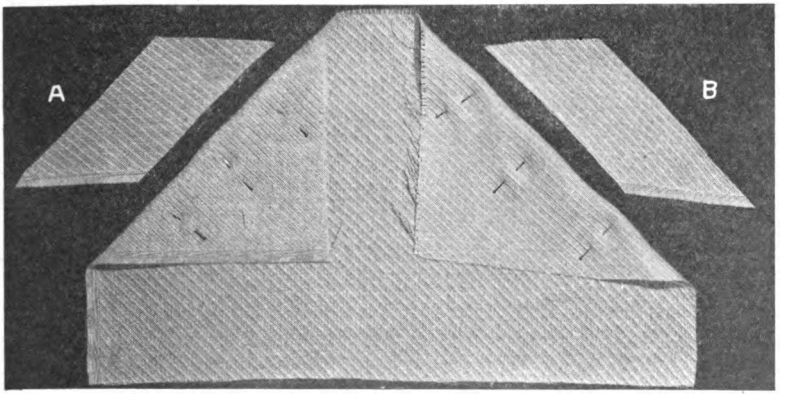

FIG. 223.—Correct and incorrect cutting of bias folds from twilled material; *A*, correct cutting, twill at right angles to edge of fold; *B*, incorrect cutting, twill parallel with edge of fold.

Cut as many bias strips, of desired width, as are necessary to give the length needed. Join these and fold through the center and baste edges together, being careful not to twist the bias as you fold the material. If the piping is to show a flat finish, press it on the

wrong side, but if it is to have a rounded appearance, omit the pressing. When the piping is to be used also as a facing, let one edge extend beyond the other when folding and basting it (Fig. 224, *A* and *B*).

To Place Pipings.—(1) When the piping serves as a facing as well, lay the folded edge of the piping on the right side of the part to be finished, with raw edge of the narrow side to the raw edge of the garment; baste to place and stitch as far from the folded edge as will make an attractive finish for the edge (Fig. 224, *C* and *D*). Turn raw edges of piping to wrong side of garment and baste on folded edge of garment. Turn in the raw edge of the wide side of piping and slip-stitch to garment (Fig. 225*A*). Should there be no strain on it, nor possibility of its turning out and showing, the edge is sometimes turned to itself and sewed with running stitches, occasionally catching it invisibly to the garment. Do not make this facing very wide, else it may draw the outside material. Press on wrong side after it is completed, to make it firm.

(2) When machine stitching is used on the garment for decoration, the edge of the garment is sometimes folded back and the piping placed under this fold, basted to place and stitched directly on the fold of the garment. This makes a strong, neat finish when outside stitching is a mode of decoration. The inner edge of the piping should be finished in either of the ways described above, or a row of stitching be applied to the edge (Fig. 225, *B* and *C*).

Bindings.—These make attractive finishings on certain types of garments and materials; for instance, scalloped edges of satin, taffeta or faille dresses and flounces, bound with the same material; challis or albatross bound with satin, taffeta or faille; tulle or organdie bound with silk or satin. Cotton materials may also be attractively trimmed in this way, voiles, dimities, chambray, gingham and percale, either in the same or contrasting color. The binding should be cut in bias strips twice the depth you wish the finished fold as it appears on one side of the garment, plus one-quarter-inch seams. Join the strips of bias, run them on the right side of the garment and turn to the wrong side and slip-stitch to first line of sewing. Care must be taken not to twist the bias when turning the binding for the second sewing. Bindings are sometimes stitched by machine. The method of sewing will depend upon the effect desired and the amount of time one can expend upon the finish of the garment. Bias

FIG. 224.

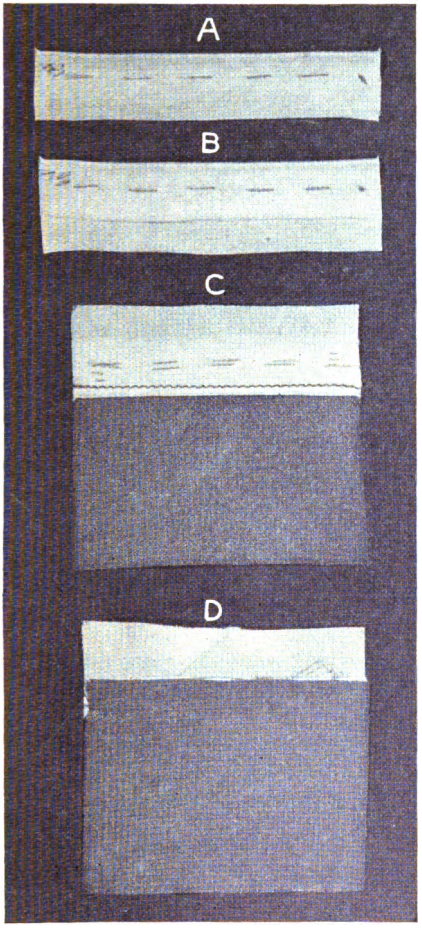

FIG. 225.

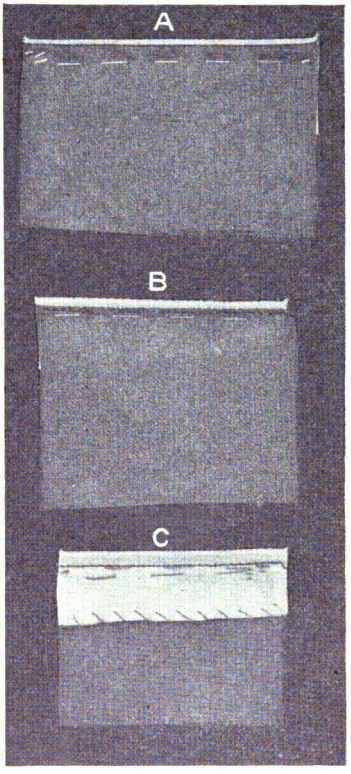

FIG. 224.—Pipings; *A*, plain piping; *B*, piping and facing; *C*, placing piping, right side of garment; *D*, placing piping, wrong side of garment before piping is turned over.
FIG. 225.—Pipings; *A*, piping as facing slip-stitched to wrong side garment; *B*, piping stitched on right side garment; *C*, wrong side of *B*.

bindings may be simulated on bias ruffles of material with no distinct right and wrong side, by turning the hem on to the right side and slip-stitching it (Fig. 226*A*). These folds give a soft round effect for finishing of garments.

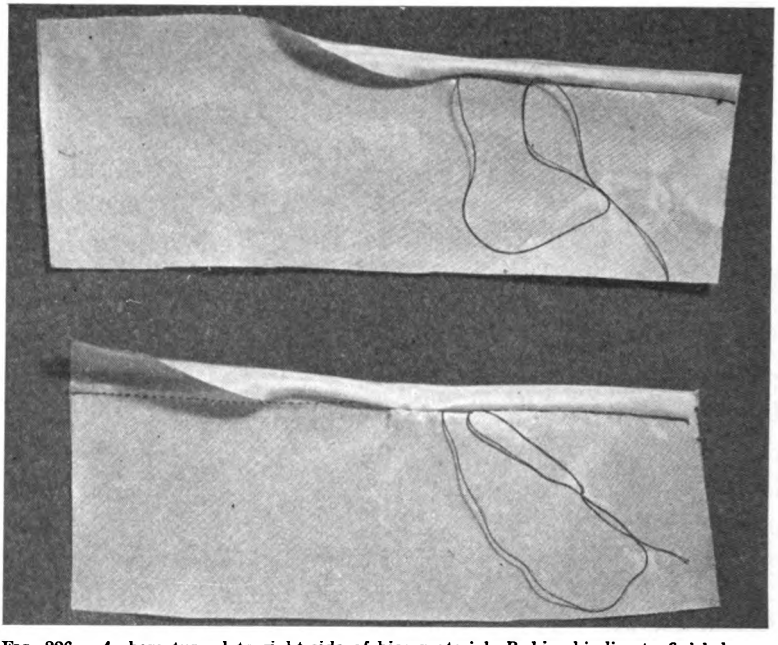

FIG. 226.—*A*, hem turned to right side of bias material; *B*, bias binding to finish lower edge of bias slip.

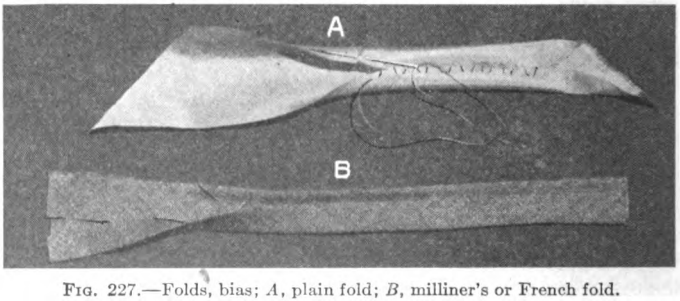

FIG. 227.—Folds, bias; *A*, plain fold; *B*, milliner's or French fold.

Folds.—Where a flat trimming is desired in some styles of garments, folds may be used effectively. They are usually cut on the bias, although with narrow skirts and some parts of waists a cross-wise cutting, especially in stripes, is sometimes used. The bias folds are of several kinds:

1. *Plain fold,* which is cut twice the finished width. The edges are turned to the center of the fold on the wrong side. If one is skilful, no basting is necessary here. The raw edges are held together by the stitch used for hemming velvet or may be catch-stitched. The folds are slip-stitched to the garment (Fig. 227*A*).

2. *Milliner's fold* is made of bias strips cut three times the width of the finished fold. The upper edge is folded over toward the wrong side, the width desired, and the lower edge folded a little and turned upon this, beyond the center of the fold, and slip-stitched to the under side of the fold. If machine-stitching is used, the fold may be finished in this way. The folds are slip-stitched to the garment. Soft folds are sometimes made double turned in at the top and stitched to the garment, on this turned edge (Fig. 227 *B*).

Lined or Stiffened Fold.—Folds may be lined with a variety of materials according to the "stiffness" of the effect desired. Crinoline, silk-finished crinoline and linen canvas are the principal linings used. Cut the bias strips the finished width of the fold, and the material the same, plus the turn at top and bottom. Place crinoline on the material and baste through the center. Turn edge of material over on crinoline and catch-stitch material to crinoline, being careful not to let the stitches show on the outside. Press lightly on wrong side, slip-stitch to garment. The edges of such folds may also be piped or corded (Fig. 228).

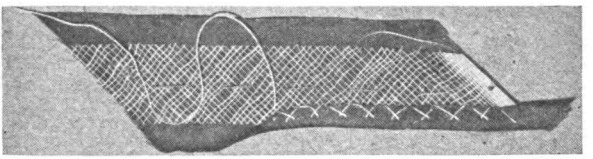

FIG. 228.—Lined or stiffened fold.

Cording may be used in a variety of ways: To finish the edges of skirts, waists, ruffles, tunics, folds, armholes and necks of waists, and wherever shirring or gathering might be used as trimming. It is to be recommended because it admits of an invisible sewing throughout. *To place the cord,* use whichever one of the following methods seems most advisable:

1. *Cording and Facing in One.*—Place cord far enough below the edge of the material to be corded, to allow for turning over the cord, and enough to finish the edge. Keep the cord on an even line under this fold, press the thumb of the left hand close up under the cord

and sew with fine running stitches. Casings may be stitched in by machine, and the cord run in afterward, but this requires utmost skill, else the casing will be too wide or too narrow. Cording attachments can be had for some machines, but unless one is doing a great deal, hand sewing is preferable. Allow sufficient material for facing and to cover cord (Fig. 229). A series of piping cords are sometimes set close together, the under edge of the first being quite wide, and after all the cords have been set in place upon this wider part, the edge of it may be turned up close to the last cord and slip-stitched to it like a fold. This makes quite a heavy trimming (Fig. 230).

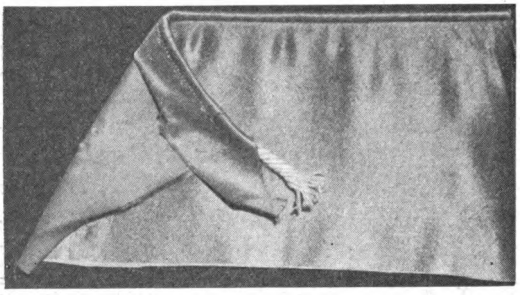

FIG. 229.—Cording and facing in one

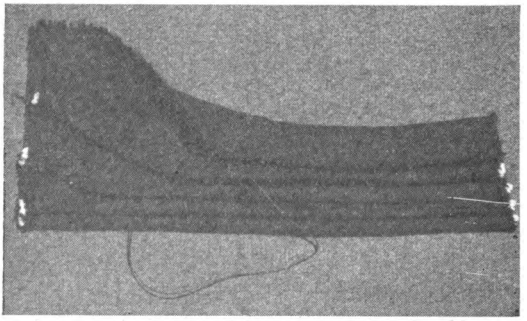

FIG. 230.—Cord pipings set on a bias fold having corded edge; the edge of the fold is finished by slip-stitching under the last cord.

2. *Shirring on Cords.* — Ruffles, tops of skirts, and all sorts of narrow trimmings may be made in this way. A point to remember in shirring, is to leave the ends of thread unfastened as you sew the cord in the material, so that when you draw it up on the cords, the threads may be drawn as tight as the cord. This makes the cording more distinct. Also in making a circular design in puffing, or rounding a corner, draw the inner cord tighter than the outer (Fig. 231*A*). Trimmings in design or loops and frogs are sometimes made of a cord set in a close-fitting casing of silk and twisted into desired shapes. To make: Stitch a casing wide enough to admit the cord and the seam of the casing. Sew a

bodkin to the end of the cord, and push the bodkin into the casing, then sew cord also to the end of the casing, continue to push the bodkin through the casing, which will thus be turned right side out on the cord.

Cord finish for the bottom of skirts and ruffles: Sew the cord into material, leaving enough of the edge to be whipped down to the cord. It may be rolled in and hemmed from the wrong side, but is more difficult to secure a straight edge. Various kinds of cords may be used. Piping cord, which is hard twisted, and cable or dressmaker's cord, which is soft and loose. Wool makes an excellent cord for soft silks, especially if one wishes to stitch it on the machine without an attachment, as the wool crushes under the presser foot, but also springs back into position again.

Shirring.—Fulness in waists, sleeves, skirts and ruffles may often be effectively disposed of by the use of shirring, which is a succession of rows of gathers placed on a plain surface, the lines for the rows having been previously marked with tailor's chalk or thread, or a tuck may be taken up by each row of gathers. The end of the gathering thread at the start should be fastened with a back-stitch. Use strong thread. When shirring threads

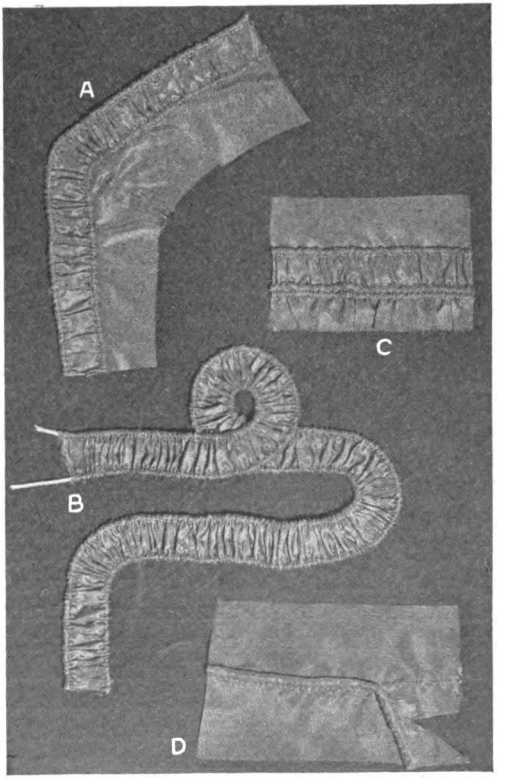

FIG. 231.—*A*, *B*, *C*, shirring on cords; *D*, cord set in armhole; sleeve sewed to cord.

are drawn to place and fastened, the fulness should be held in place by laying a piece of bobbin on the back of the garment under each row of shirring, and tacking it at intervals to the wrong side, letting the bobbin be very easy. Gauging is a form of shirring by which a great amount of fulness is brought into a small space, as a wide straight skirt into a waist band. It is done in successive rows, a long stitch on the right side, a short on the wrong, and by keeping the long stitches in each row directly under those of the preceding row. When they are drawn up, the gathers stand out in ridges. The back of each gather is overhanded to the belt, or band, which holds it in place (Fig. 103).

Tucks (Fig. 100), folds lifted in material and sewed by hand or machine, or with an ornamental stitch. Tucks are used as decoration on all kinds of garments, and for practical purposes to shorten garments in anticipation of shrinkage after which the tuck can be taken out; or when the wearers, if children, outgrow the garments in length.

When planning to put tucks in any garment, enough material must be allowed, beyond the finished length or width of the garment, to make the number of tucks desired; the rule is: Allow twice the depth of the tuck to be made, multiplied by the number of tucks desired. When actually making the tucks, care must be exercised in measuring and marking, so they may all be even in depth, and with an even space between. Take, for example, a group of tucks to be made in a petticoat ruffle, the lower edge of which has been finished with a hem. Measure from the stitching of the hem, twice the depth of the tuck plus the space which is to show between the hem and the tuck and at this point make the crease, which will be the lower edge of the tuck when completed; then measure from this crease the depth of tuck desired and sew by hand, or baste ready for machine stitching, unless the tucker attachment is to be used, in which case basting is unnecessary. Each succeeding tuck must be measured and make in the same way if to be sewed by hand, or stitched on the machine without using the tucker, but if that attachment is to be used, it must be set to stitch the tuck the proper width, and mark the crease for the next tuck at the right distance. Then it is only necessary to measure for the first tuck by hand, all succeeding ones being taken care of by the tucker. Groups of thread tucks, or those of greater width may be used on the back and front of waists,

and grouped into cuffs and collars. Bands of tucks are used in combination with lace or insertion. When fine tucks are used on silk waists, an interesting effect in waist and sleeve can be made by stitching across the tucks, keeping them all in one direction, the next stitching reversing the tucks, stitching one and one-half to two inches apart. A band or puffing of small tucks or plaits laid in one direction at the top, and reversed at the bottom, may be used with a plain or milliner's fold at the edge.

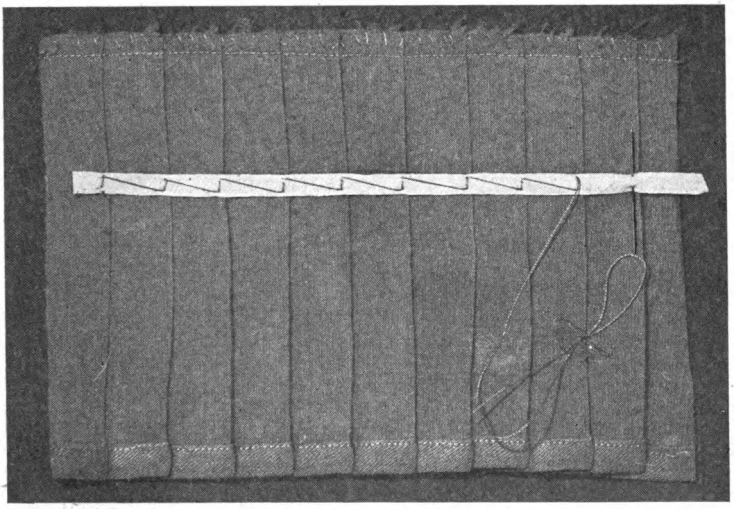

FIG. 232.—Method of tacking plaits, to preserve their shape.

Plaitings, like various other forms of decoration, have their seasons of use and disuse. They may be classified as side and box plaitings. *Side plaits* are like tucks, not stitched down, but all turning in one direction and with the edge of each plait meeting the under fold of the next plait or there may be a space between. Cut sufficient strips of the desired width, to give the necessary amount of plaiting, the width of the strips on the lengthwise thread of the goods. From one and one-half to two and one-half times the finished plaiting may be used, depending on the depth of the plaits and the space allowed between them. Join the widths, using a plain seam, overcast raw edge and press seams open. Hem, or

have hemstitched by machine, the strip for the plaiting. Take up the depth of the first plait on the hemmed edge, lay fold of plait to material, baste to place, decide on space you wish between plaits, and allow this plus the depth of the next plait and fold again; carry basting over from first plait and baste second. Continue until all plaits are laid and basted on the lower edge. Baste again through the center, keeping plaits on the same grain as the lower edge. Baste again at the top. Narrow plaitings need but two bastings; wide ones, many more. With very wiry materials, the plaits need to be basted lengthwise of the plait. *Box plaits* are like two side plaits

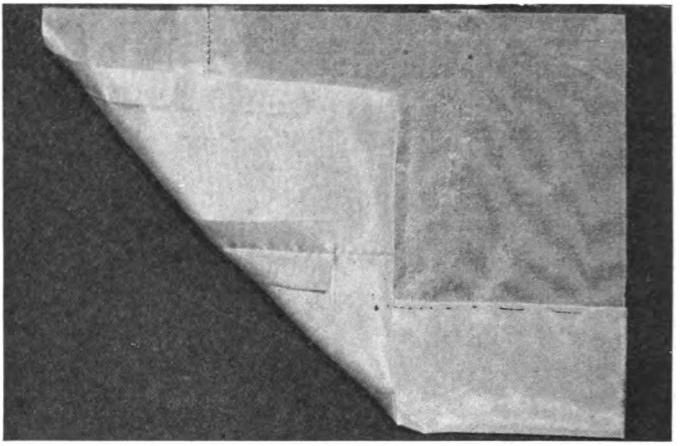

FIG. 233.—Reversed hem.

laid in opposite directions, the under edges of the plaits meeting on the wrong side. These should be measured and basted in the same way. Double box plaits are like a single box plait with a side plait each side of it, turning in opposite directions, the width of the side plait usually the width of the one-half of the box plait. They should be measured and basted as the others. Plaitings are sometimes tacked to a tape to keep them in place (Fig. 232). Shirrings are also held in place in the same way.

Knife, accordeon or sun plaitings denote the several types of fine plaiting done on a machine with use of steam and irons. Knife plaiting can be done more or less successfully by the amateur, with

the use of some of the plaiting machines. It takes considerable time and care, however, and unless one were doing a great deal of it, it is far better done by an expert. Side and box plaitings for tunics and skirts are more satisfactory when done by a professional.

Reversed Hems.—An attractive foot-trimming for a straight skirt may be made by turning the hem on the outside of the skirt, and stitching it down to the skirt, or edging the top with a cord or piping. *To reverse hem,* stitch the seams of the skirt far enough down to come a little below the top of the hem, the depth of which must have been previously planned. Clip the seams, and turn them through to the right side of the garment, then turn hem and baste. This can be done only where material of skirt shows no difference between right and wrong sides (Fig. 233).

Bound Buttonholes.—Two kinds of bound buttonholes are used, one purely for ornamentation, the other for use as well. These will be discussed in the order mentioned:

1. Mark place for buttonhole and size with thread. Place straight strip of cambric or lawn, wider than the length of the buttonhole, on the under side of the garment to stay material. Lay two bias strips of material, right sides to right side of garment, and edges meeting at line for buttonhole. Turn the ends of the bias material back at the ends of the buttonhole. Stitch by hand or machine, one-eighth inch from line of buttonhole. Cut through buttonhole and turn binding through to wrong side, not turning the seam of the buttonhole. Run binding to wrong side of material so stitches will not show through. Trim edges of binding and overcast to cambric. The ends of this buttonhole are not protected at all.

2. Lay a lengthwise strip of cambric or lawn, wider than the length of the buttonhole, on the under side of the garment, where the buttonholes are to be cut. Mark with colored thread the place and length of the buttonhole. Baste a strip of bias material, two inches longer than the length of the buttonhole and one and one-half inches wide, over the place marked for it, right sides together, center of bias strip on the line of the buttonhole; mark buttonhole through it with colored thread, then stitch by hand or machine right around the marking, allowing as narrow a seam as possible and running it off to nothing at the ends of the buttonhole. Cut between the two rows of stitching and turn the binding through to the wrong side and run to the cambric stay. Trim away what is

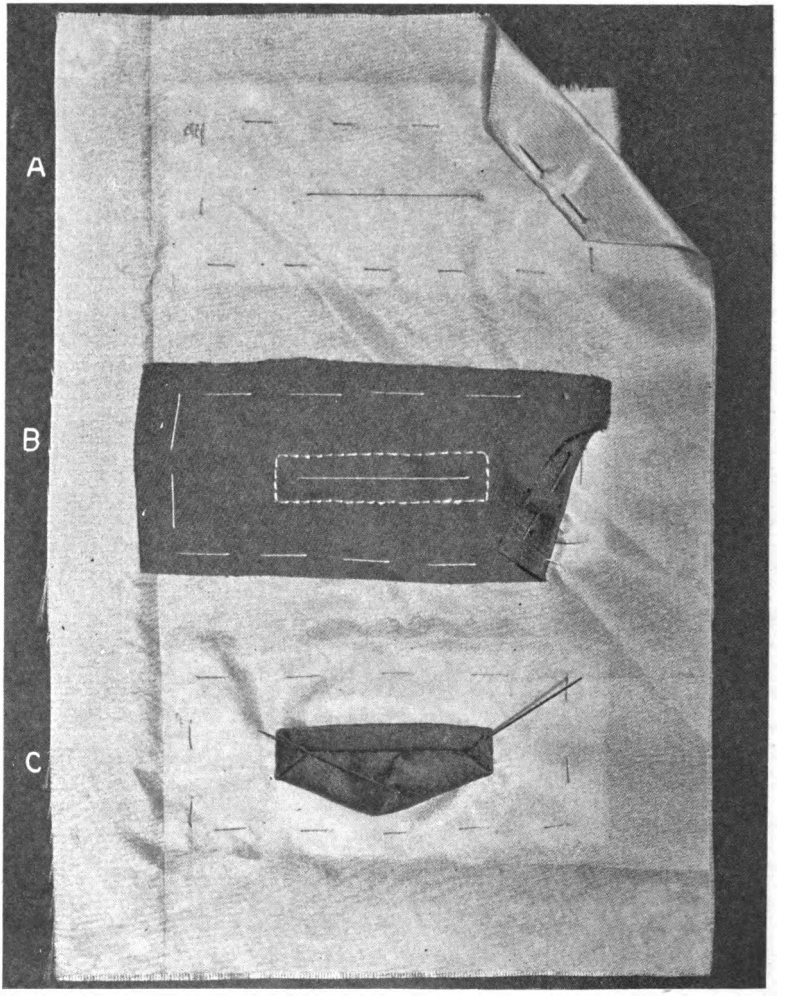

FIG. 234.—Bound buttonhole for decoration; *A*, cambric stay on under side garment; *B*, binding basted and stitched around slit; *C*, binding turned through to wrong side, corners folded in to form miters.

unnecessary and overcast edges. Cut holes in the facing of the garment over the buttonholes, and hem facing down to the inside of the buttonhole.

3. Similar to No. 2, except in manner of stitching, which should

be square at the ends, making a perfectly even turn on the binding which can be folded in diagonally, as a miter, at the corner (Fig. 234).

Buttons.—Various types are often used effectively as trimming for waists and skirts. For tailor-made garments, they can be made any shape or size, of your own material, by regular button makers. Attractive buttons can be made by covering button moulds with circular pieces of material, gathering the edges in to the center and fastening off so as to form a neck to sew them on by. These may be ornamented with lace or embroidery stitches in wool or silk. An attractive button can be made by covering wooden beads the same as the button moulds, first drawing the center of the material with needle and thread, down through the hole in the bead, then gathering the edges to finish the button.

False Hem or Facing.—When making circular or two-piece skirts which are very wide, if a hem is turned it will often be much too full at the top to shrink out. To avoid this, cut the skirt, allowing for hem as usual, plus a seam, measure and trim top of hem as you would ordinarily, then cut off this hem and seam allowance and set it up on the skirt. It will fit smoothly by taking some out in the back or hip seams, and has the advantage of being on the same grain as the skirt itself. It can be placed on either the right or wrong side of the skirt. *To place on right side,* lay the right side of the facing to the wrong side of the skirt, baste, stitch, turn edge, letting facing show a little on the wrong side of the skirt; turn top edge in and stitch close to edge or as a tuck if desired. Press carefully according to the material upon which the work is done. Facings of this kind can be placed on skirts having a panel with wide tucks at the seam, because the join in the facing can be hidden by the tuck, but it is not as desirable as on a plainer skirt.

Pockets give a distinctive note to tailored skirts and waists. Constructive principles and suggestions for making are given under the middy blouse (set-in pocket) or shirtwaist.

SUGGESTIVE QUESTIONS

1. Name several types of trimmings one can make, using the material of the dress.
2. Describe the method of making tucks.
3. How would you make a side plaiting?
4. Show, by drawing, right and wrong ways of cutting twilled material.
5. Which way of the cloth must bindings be cut?
6. What is a true bias?

CHAPTER XXIII

DECORATION: EMBROIDERY

Outline stitch (Fig. 235), is worked from left to right along the line to be followed.

Bring the needle out at the left-hand end of line, let the thread drop below line, take a stitch from right to left on the line, one-half the length of stitch to be used, bringing needle out in same hole, where thread came out last, and take up next stitch, one-half length beyond, and bring needle out in same hole with end of preceding stitch, continue in this way, making a long stitch on the right side and a short one on the wrong side, and allowing thread to drop below line each time. The right and wrong sides of this stitch are the reverse of the right and wrong sides of backstitch used in plain sewing.

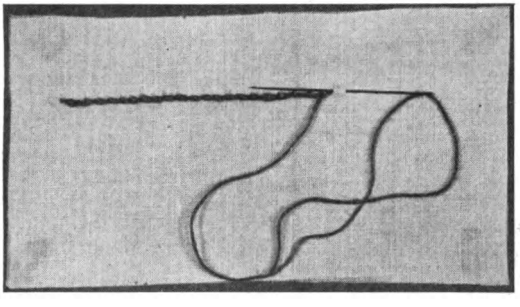

FIG. 235.—Outline stitch.

Chain Stitch (Fig. 236), is worked toward one, bring the needle up at the end of the line, let thread hang naturally, or hold in place with the left thumb, put the needle back in the same hole it just came through, and bring it out a short distance in advance, and over the thread which thus is held down in the form of a loop; each stitch is made in the same way, one end of it coming out through the preceding stitch, and the other end held down by the next stitch.

Lazy daisy stitch (Fig. 237), is a very simple and easy way to work the petals of tiny flowers as small daisies or forget-me-nots. One lazy daisy stitch makes each petal.

To work: Bring the needle up at the inner end of petal near the center of the flower, hold the thread under the left thumb, put the needle in exactly beside the hole it just came through and bring it

out at the tip or outer point of the petal over the thread, thus making one chain stitch, then put needle in again at the tip of petal, outside the chain stitch so as to make one stitch over the thread, thus holding the chain stitch in place. Repeat on each petal.

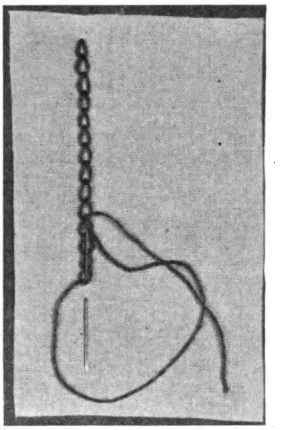

Fig. 236.—Chain stitch.

Blanket stitch (Fig. 238), so called because used to finish the cut edge of a blanket or other flannel article, to prevent its ravelling; when used in embroidery it is usually erroneously called "buttonhole stitch." See Fig. 239 for details of stitch.

This stitch is used to finish edges of linens when finished with scallops or scrolls and to follow the outline of designs in surface work.

To work: For example, on a scallop, hold the lower edge of the scallop toward you, begin at the left-hand end of it, and work towards the right hand, do not use a knot, but run thread through center of scallop for a few stitches, and bring the needle through on the lower edge of the scallop, let the thread fall naturally toward the right hand, or hold down with the left thumb, put the needle in on the upper edge of scallop and bring through on outer edge exactly beside first stitch, pull thread into place and repeat, being careful that each stitch is perpendicular and very close to the preceding one. The stitch may be varied, when used elsewhere than on scallops or on very large scallops, by alternating one long and one short stitch or lengthening and shortening them gradually in groups, to form pyramids, triangles or battlements. If it is desirable to have the

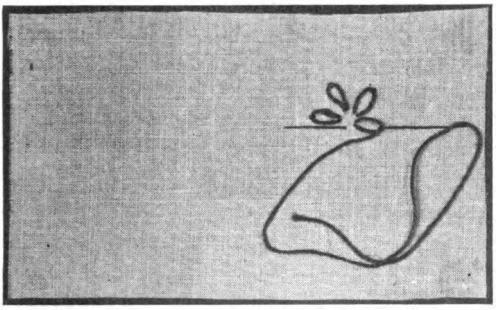

Fig. 237.—Lazy daisy stitch.

work raised slightly, the scallop or other design may first be padded by placing a row of running stitches on each outline and through the center. This padding may be done with the same thread used for the embroidery, or darning cotton may be used. The latter is cheaper and fills in more quickly (Fig. 240).

Feather, Briar or Coral Stitch (Fig. 241).—These names are given to variations of the buttonhole or blanket stitch. Each stitch taken is a blanket stitch, worked first on the right of the line to be followed, then on the left, again on the right and so on to completion. The variation comes in the slant of stitch and the number placed on one side of the line before reverting to the opposite side.

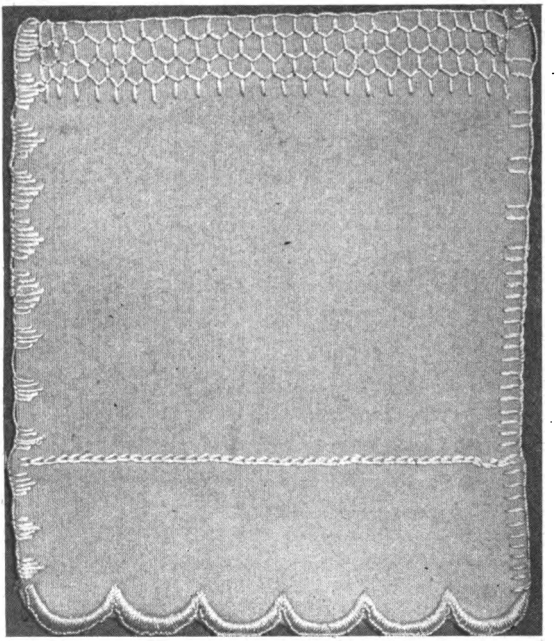

FIG. 238.—Varieties of blanket stitch, plain, honeycomb, scallops.

The stitch is made toward the worker; bring the needle out at the top of the line, hold the thread under the left thumb, stick the needle in one-eighth inch or less, to the right of the point where thread came out, and bring needle out about one-eighth inch or less, below and slanted slightly toward line of design. As the needle is brought out over the thread, a buttonhole stitch is formed. Then throw the thread around to the left and make a similar stitch on the left-hand side of the line. Continue in this way. This may be varied by making two or more stitches on each side of the line each time before working on the opposite side. The illustrations show how this may be done.

Herringbone or Catch Stitch (Fig. 242).—Used for decoration and for practical purposes to hold down an unfinished edge, as the unturned edge of a hem in flannel or the edges of a seam in flannel.

This stitch is worked from left to right, between two (imaginary) horizontal lines. Bring the needle out at the left-hand end of the lower line, take a stitch from right to left on the upper line, sufficiently in advance of the first stitch on the lower line, to give the desired slant to stitches, then take a stitch from right to left on lower line at the proper distance to give the desired slant; proceed in this way for the remainder of the work.

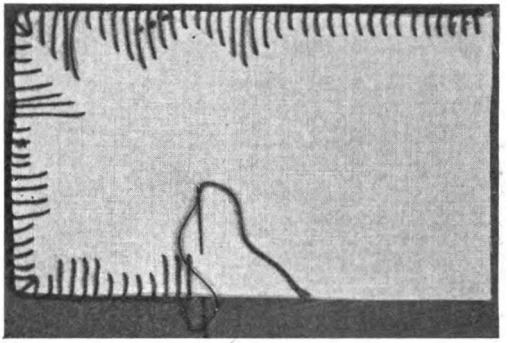

FIG. 239.—Blanket stitch, detail.

Cross Stitch (Fig. 243).—Used as ornamentation either by working the design with the stitch or by working in the background in cross stitch and leaving the pattern in the material itself. This stitch is also used for marking initials on undergarments, bed linen and towels.

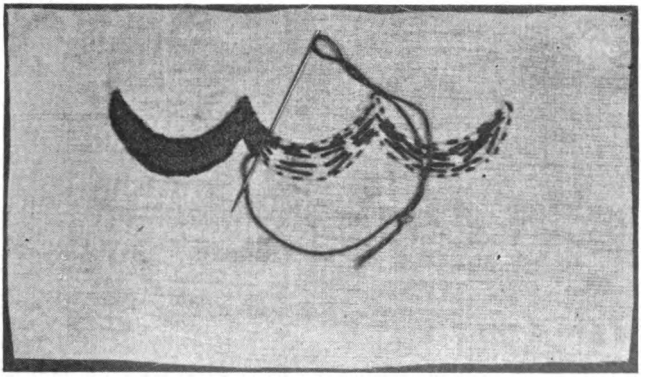

FIG. 240.—Blanket stitch, scallops.

Cross stitch is simply one stitch crossed over another, the two occupying a perfect square, crossing it diagonally from corner to corner; it must be worked according to the lines formed by the warp and woof threads of the material, which gives a quaint angularity to the design thus treated. If the threads of the material are very fine or otherwise difficult to follow, or one wishes to work a design diagonally across the corner of an article, as a handkerchief, penelope or cross stitch canvas may be basted upon the surface of the material and the stitches worked over and through both canvas and material, after which the threads of the canvas may be drawn out.

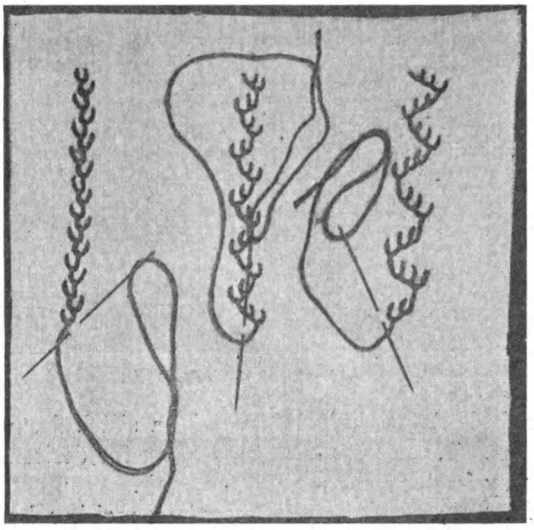

FIG. 241.—Feather, briar or coral stitch.

The stitches must always be crossed in the same way, and worked in the same direction in order to present an even surface.

To work: Proceed from right to left, use no knot, let end of thread be caught by stitches on under side; bring needle up at lower left-hand corner of first square to be crossed, put it down at upper right-hand corner, up at upper left-hand corner, and down at lower right-hand corner, completing the crossed stitch, go forward to lower left-hand corner of second square to be crossed and repeat.

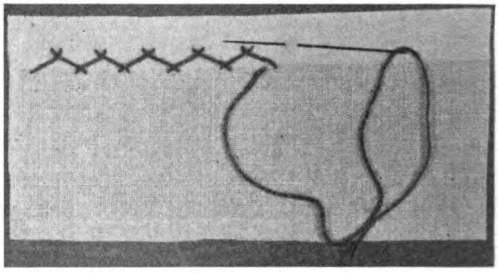

FIG. 242.—Herringbone or catch stitch.

Couching (Fig. 244).—A form of surface work used to outline the motives in a design.

To work: Two threads of the same or contrasting color, are necessary, one very heavy, the other fine, or a cord and a fine thread. The heavier thread or cord is laid along the design on the surface of the material and fastened to it by stitches of the finer thread.

To work: At the right-hand end of the design make a small hole with a stiletto, pass the end of the cord through this hole to the wrong side of the material, then either make a knot at the end of cord, and sew it to material, or firmly sew the end of cord to place. Holding the cord in place along the design with left hand, bring the needle through from the wrong side one-quarter inch from right-hand end of cord and just below it, then put the needle into material above cord, directly across from where it last came through, move forward as far as desired, from one-quarter inch to one-half inch, according to size of cord and thread being used, and repeat stitch as before.

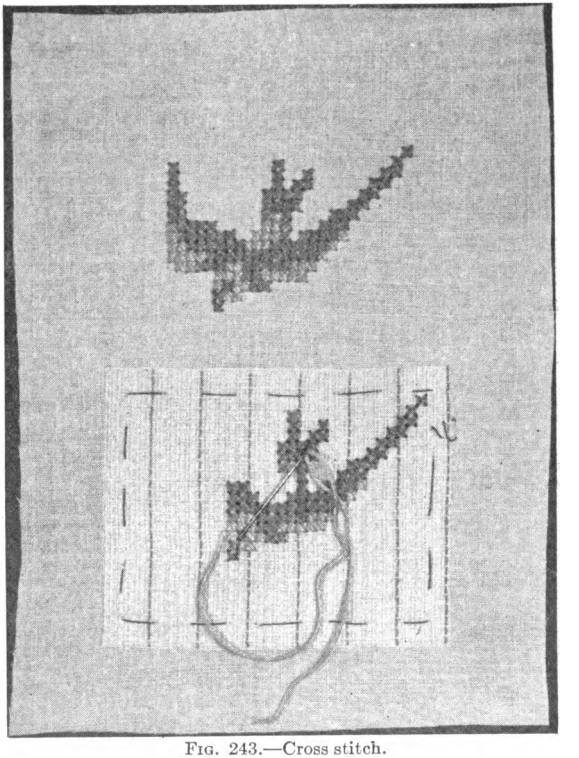

Fig. 243.—Cross stitch.

French Knot (Fig. 245).—Used for center of flowers, as line decoration and to fill in solidly many forms, shapes or spaces.

To make: Bring the needle up to the right side of the cloth at point where the knot is desired, then hold the thread near the ma-

terial with the left hand and wind it one or more times around the point of the needle, stick the point of the needle back into the cloth very near the place where it came out before, push the coil of thread down close to the cloth and hold it with the left thumb, while you pull the needle through to the wrong side. The coil of thread remains on the surface, forming the knot.

Ornamental Tacks.—Used to finish the ends of set-in or tailored pockets, the ends of seams or the stitching of plaits on tailored garments. The simplest of these is called a

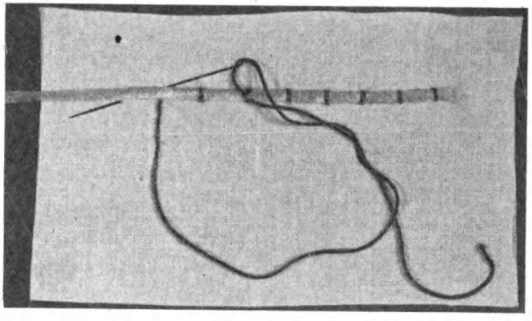

Fig. 244.—Couching.

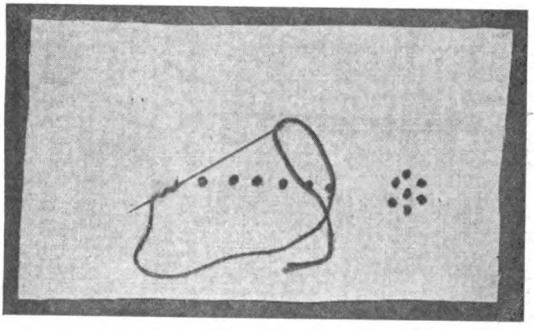

Fig. 245.—French knot.

Bar tack (Fig. 246*A*), used generally at the ends of pockets. To make: Bring the needle up at the end of the pocket on the outer row of stitching on one side and put it through on the outer row of stitching on the other side, thus making one long stitch across the end of the pocket; repeat two, three or more times, according to the number of thread used and the size tack desired, bring the needle up and putting it through the same hole each time at the respective ends of the stitch. When enough of these long stitches have been laid, bring the needle up at one end of the bar and exactly below it, put the needle through to the wrong side above the bar and exactly opposite to where it just came up, making a small stitch straight across the long ones; bring the needle up again below the bar

exactly beside the first stitch and repeat, in this manner covering the whole bar with satin stitch. It is necessary that the needle be brought up and put through with two motions, as described, in order to be sure that the long stitches on the wrong side are also covered the same as those on the right side. If desired, each end of this tack may be finished with a small bar tack (Fig. 246*B*) made in the same way.

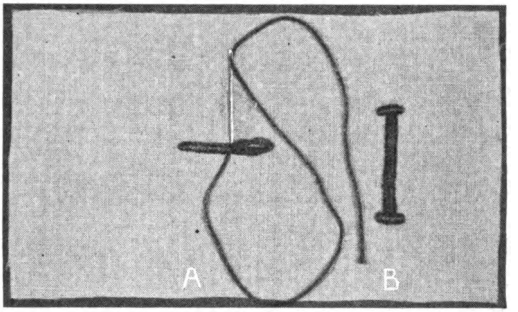

FIG. 246.—Bar tack.

Arrowhead tack (Fig. 247) is used on the ends of the pocket in middy blouses, shirtwaists, etc. To work: Run needle through center to point *A* in order to fasten end of thread without using a knot, put it down at point *B*, bring it up again at *B*, to the right of stitch just made, put it down at the right of *A* and bring up at the

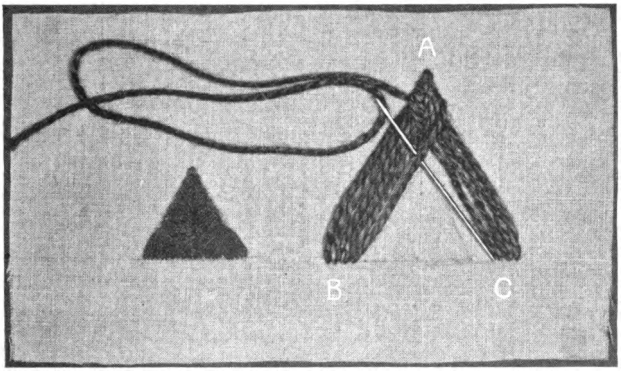

FIG. 247.—Arrowhead tack.

left of *A*, then pass needle under the second stitch made from *A* to *B*, and put needle through to wrong side at *C*, bring it up again just at the left of *C* and down at the left of *A*, up again at the right of *A* and down at the right of *B*, up at right of that stitch and so on until arrowhead is completed. Keep in mind that two stitches are made

parallel to line *AB*, or to line *AC*, before reverting to the other side and that each time the first stitch of pair made parallel to line *AC* is passed under the last made stitch parallel to line *AB*.

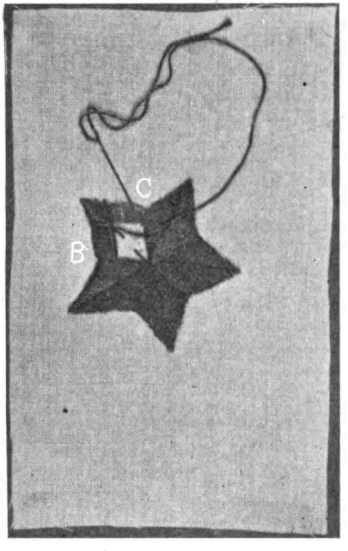

Fig. 248.—Star.

Star (Fig. 248).—The five-pointed star as used on the collar of middy blouses is made in the same way as the arrowhead, *i.e.*, each point of the star is worked separately, placing the stitches as in the arrowhead, except that the stitches from points *B* and *C* progress downward toward the center of the star instead of straight across toward each other as in arrowhead.

Anchors, eagles or other emblems used on sailor or middy blouses are worked with laid or satin stitch (Fig. 258). It is a good plan to baste a piece of crinoline or canvas under the material upon which the emblem is to be worked, and after working cut the canvas away close to the stitching.

The chevron or bars used on the sleeve of blouse are not embroidered, but cut from scarlet or blue material, three-eighth inch wide and may be stitched to the sleeve, or applied with a straight stitch worked over the edges like laid stitch.

Hemstitching (Fig. 249) is an attractive way to finish the top of a hem. It must be done along the thread of the material as threads must be drawn in preparation for the work. To prepare material, decide upon the width of hem to be made, measure up from the edge of the material, twice this amount plus one-eighth

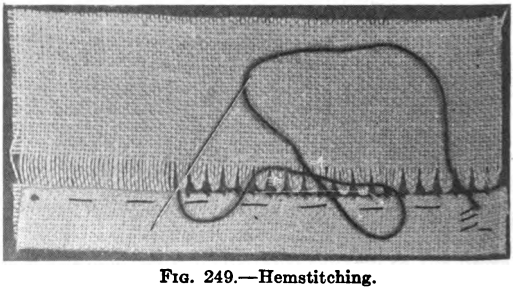

Fig. 249.—Hemstitching.

inch for the first fold of the hem; at this point draw the first thread from the material. The number of threads to be drawn, or the width of open work to be made at the top of the hem, will be determined by the weight of the material, the depth of the hem and the size of the garment or article which is being made. When the threads are all drawn, fold and baste the hem to place, being careful to have the edge of the hem lie exactly along the lower edge of drawn space.

To work: Hold the wrong side of hem toward you, the line of open space along the cushion of first finger on left hand, pass the needle from left to right through the first fold of hem, to conceal the end of the thread, do not use a knot. Now pass the needle from right to left behind a group of four or five threads in the drawn space and pull the thread through, again pass the needle behind the same group of threads and through the folded edge of hem, but not through the cloth behind hem, draw the thread tightly, thus holding the group of threads close together, repeat with each new group of threads. *Double hemstitching.* After the foregoing line of work has been accomplished, turn the article around and repeat the same stitch on the opposite side of drawn space, using the same groups of threads on this side, thus making straight bars of threads across the open space (Fig. 250). *Diagonal hemstitching.* Make the first row as in plain hemstitching. In the second row, let the needle lift half of each, same group of threads making a zig-zag line of bars (Fig. 251).

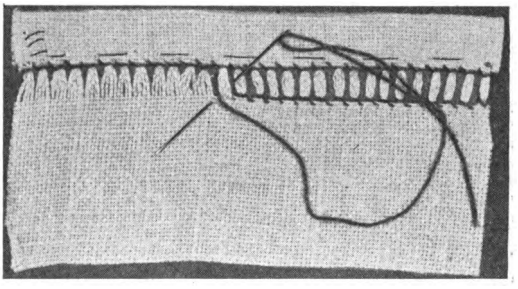

FIG. 250.—Double hemstitching.

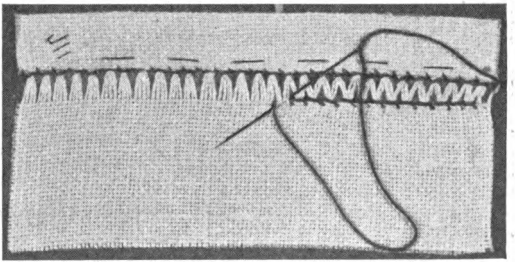

FIG. 251.—Diagonal hemstitching.

Smocking (Fig. 254) is an ornamental way of arranging and holding fulness in various parts of garments, in place. The material to be smocked must be gathered very regularly and drawn up to about one-fourth the measurement when plain, and then on the surface of the gathers ornamental stitches are worked. In order to make the gathering very regular, the material should first be marked or "charted" on the wrong side by horizontal rows of dots, the space between the dots, usually from one-eighth to three-eighth inch, to be governed by the weight of material and the amount to be gathered (Fig. 252). The distance between the horizontal rows of dots, varies from three-eighth to three-quarter inch. The dots may be marked with pencil, using a ruler to measure and guide, or transfer patterns may be purchased and used for this purpose. For the gathering, use strong thread, No. 40 to No. 60, according to the weight of the material; work on the wrong side, take one little back-stitch at the first dot to prevent knot pulling through material later on, then gather by lifting the

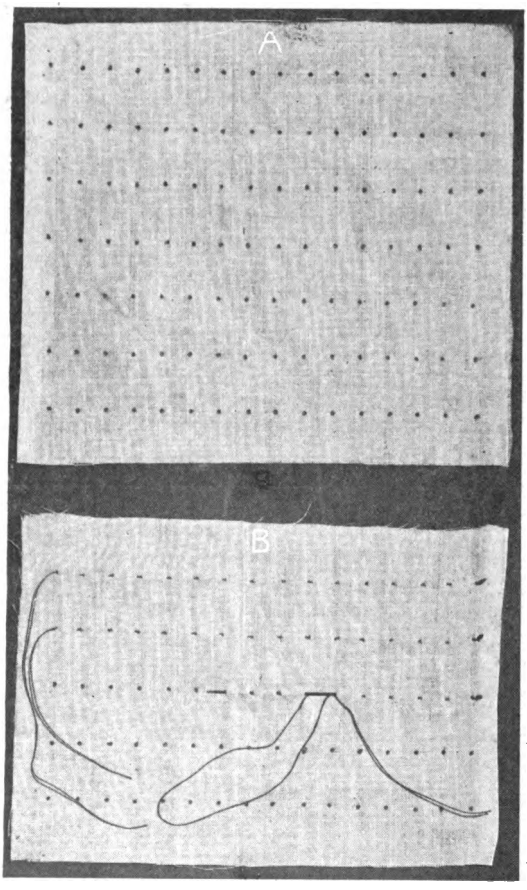

FIG. 252.—*A*, charting material; *B*, gathering material.

material between dots on the needle and passing over just a few threads of the material on each dot. When all lines of gathering are in, draw the material up to about one-quarter the original width and fasten by winding each thread on a pin or by tying two threads together. Next turn to the right side and pull the gathers into place so that each stitch full comes up evenly in place, the same on

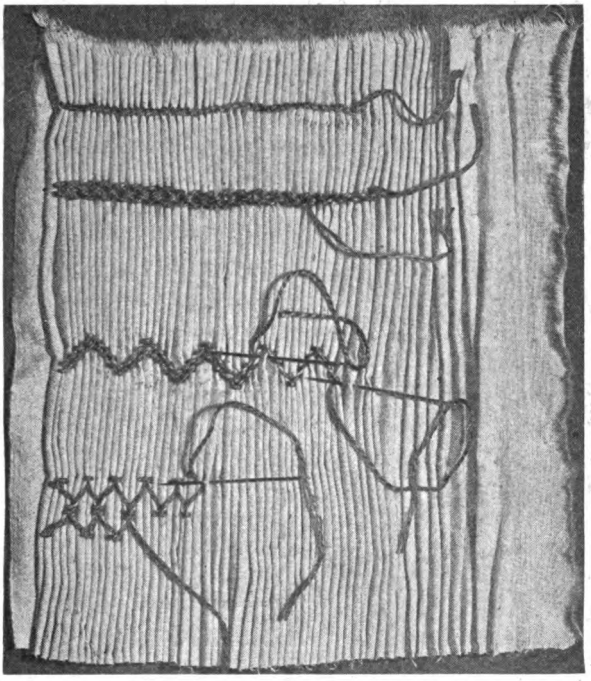

FIG. 253.—Smocking—Method of making stitches; *upper row*, outline stitch; *second row*, cable stitch; *third row*, wave stitch; *lower row*, diamond stitch.

each row of gathering, thus laying the fulness in even lines throughout (Fig. 253).

Now we are ready for the decorative stitches; use any embroidery cotton or silk suited to the material, same or contrasting color.

Outline Stitch.—The first stitch which is always used at the top of any design in smocking is simply the outline stitch (Fig. 253), worked on the first row of gathering, let the thread drop naturally below the needle and take up the tip of one plait in each stitch.

Single cable (Fig. 253) is worked on second row of gathers from left to right side, like the outline stitch, but reverse the thread with each stitch, *e.g.*, let the thread drop below the line for first stitch, throw it above the line for the second, below the line for the third, and so on.

Double cable (Fig. 253) is made by working another row of single cable, close under the first row, but reverse the thread in the opposite order, *e.g.*, throw the thread above the line for the first stitch, below for the second, above for the third, and so on.

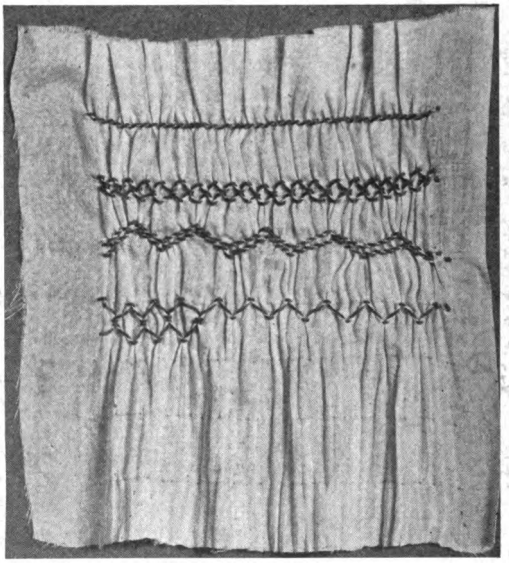

FIG. 254.—Smocking, showing material after stitching is completed and gathering thread removed.

Wave stitch (Fig. 253) is worked a waving or zig-zag line from left to right, bringing the needle up through the first plait, half way between the third and fourth rows of gathers, work four outline stitches in a gradually ascending line with the thread below the needle, then reverse the thread and make the first stitch exactly beside the fourth and complete four in a gradually descending line with the thread above the needle, reverse the thread again and work up, and so on, keeping in mind that as you work down the thread should be above the line, and that the last stitch of one line and the first stitch of the next line are side by side. Work two or three rows of wave stitch close under each other. If you wish to vary it, work a second group of wave stitch below the first, so that the lower and upper angles of the respective groups meet, forming diamond shapes.

Diamond stitch (Fig. 253), start as for outline stitch, take one stitch in the first place on a gathering thread, with the thread below

the needle, another beside the first, in the next plait with the thread above the needle, then half way down toward the next gathering thread, take a stitch in the third plait with the thread above the needle, another beside it with the thread below the needle, then up to the gathering thread again and so on to the end of the line. Repeat the diamond stitch with points meeting to form squares. A

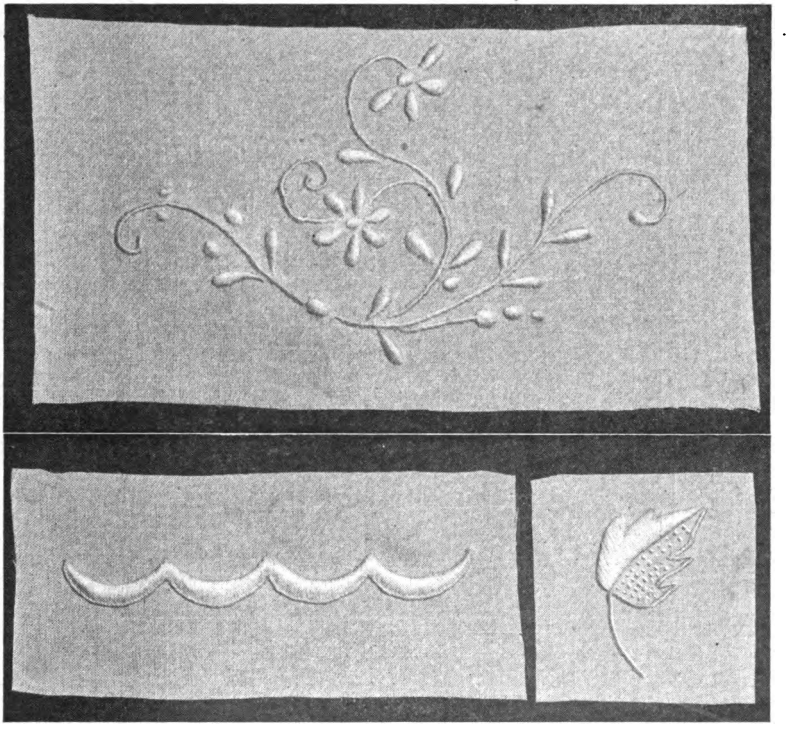

FIG. 255.—French embroidery, floral design; scallops.

number of rows, covering the surface makes an attractive decoration. When the smocking is completed, it is well to press or steam it before pulling out the gathering thread, in order to make the plaits stay in place and the embroidery stand out. Lay the work face down on the ironing board, lay damp cloth on top and pass a hot iron very lightly over it; do not press on it. Then remove cloth and pass or hold iron over the work until dry.

French embroidery or white work is mainly satin stitch, relieved occasionally by seed stitch, matting, French knots and eyelets. It is used for decoration of lingerie and household linen, either in floral designs or initials and monograms (Figs. 255, 256 and 257).

Satin stitch (Fig. 258), sometimes called laid work, because the stitches are laid exactly parallel and close together, across the unit of design; when being worked, *e.g.*, a leaf flower petal, stem or portion of a letter, is worked from left to right, holding the unit so that the

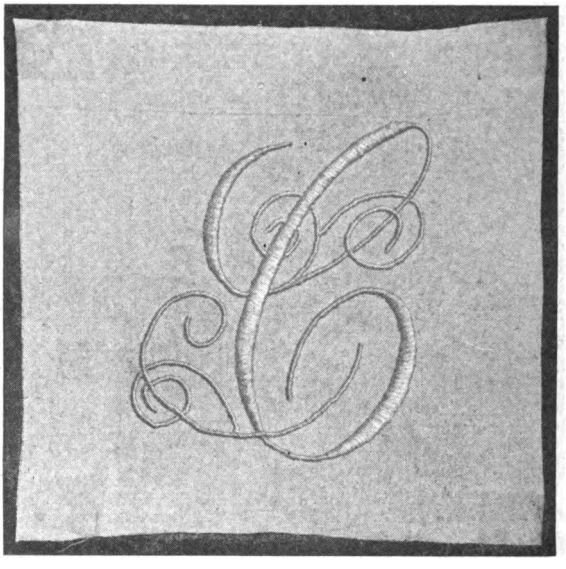

FIG. 256.—French embroidery, initial.

stitch may be worked vertically. Bring needle out on edge of leaf next to worker and put it in on opposite edge, putting needle in and out each time exactly beside the preceding stitch, and exercising care to preserve an unbroken contour of the unit. The work is finer if the distance covered by the stitch is short, thus preventing the separation of stitches afterward; therefore if a petal or leaf is rather broad, divide the stitches in the centre, by putting the needle up and down on the center line of unit, but be careful to keep this line even and exactly in the centre of leaf. The satin stitch is usually brought into relief by padding the design before working, this is

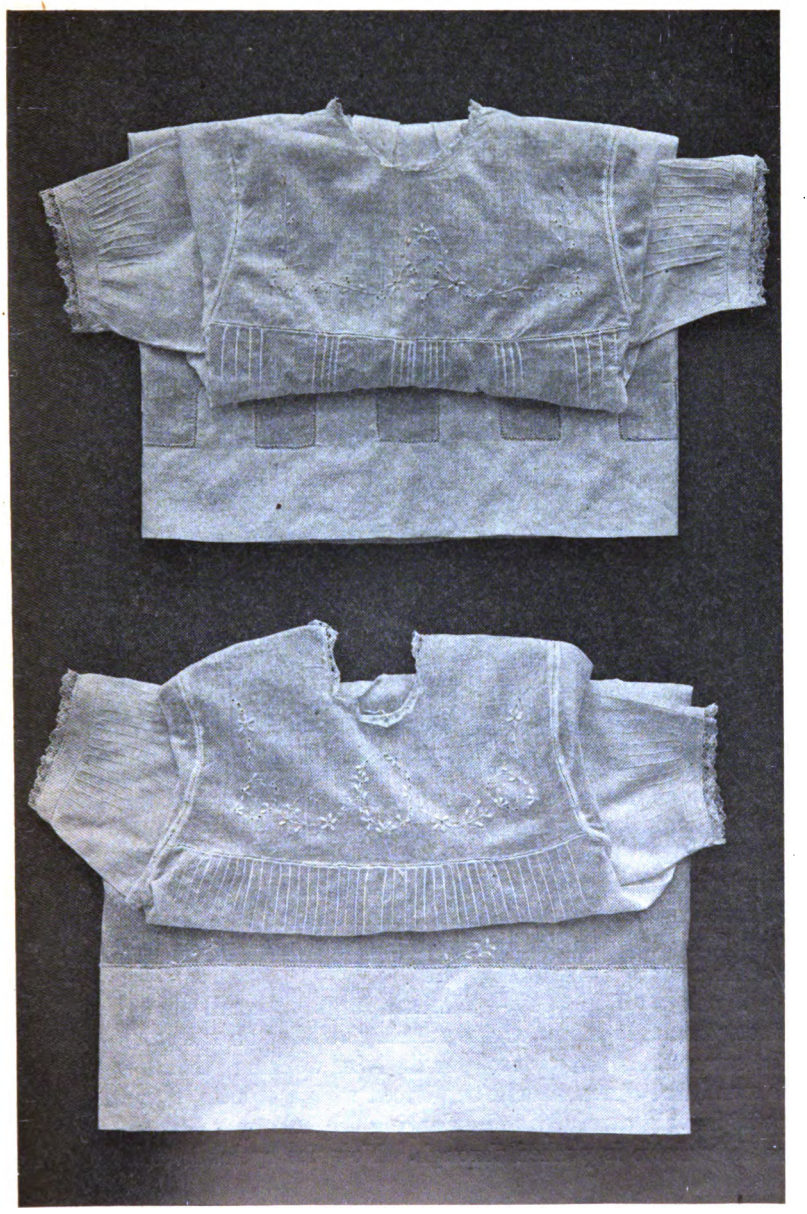

FIG. 257.—French embroidery, infants' dresses.

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done on the units by putting several rows of loose stitches in the center of the unit, laying them lengthwise, or in the opposite direction to that which the satin stitch is to be worked, the unit may also be outlined by a row of running stitches; if desired, a stem or other line is padded by holding two or more strands of the thread along it and working the satin stitch over them. The same thread should be used for padding that is to be used for the embroidery.

The texture of French embroidery is relieved by the use of a few other stitches, for example:

Seeding (Fig. 259) may be carried out in tiny French knots or each seed may be made, using double thread, by two tiny back

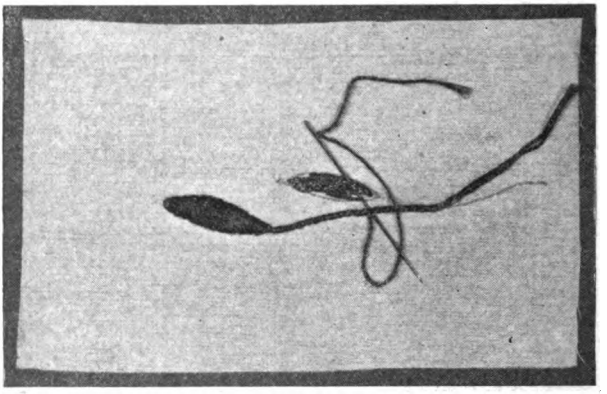

FIG. 258.—Laid or satin stitch, showing padding, finished leaf and working stem.

stitches one on top of the other, scattering these over the petal or half leaf to be thus carried out.

Matting (Fig. 260) is similar to seeding, but is worked with a single thread, only one back stitch each time and very close together, practically covering the surface. The outline of a unit to be filled with "seeding" or "matting" must be worked in fine satin stitch, padding as for a stem (Fig. 258).

Eyelets (Fig. 261).—Whether large or small should first be strengthened by a row of fine running stitches on the outline, using the same thread that is used for the later working; then if the eyelet is small, the center should be pierced with a stiletto, by putting the point in very carefully and enlarging the hole by a twisting motion, as the stiletto is pushed through. Now the eyelet is to be worked

with a close overhanding stitch from right to left, drawing each stitch tightly to make a firm even edge, and occasionally putting the stiletto in the eyelet and twisting it to keep the opening round. If the eyelet is large or oval instead of round, after putting in the running stitches, the cloth must be cut from the center, using a pair of very sharp-pointed embroidery scissors. Care must be taken when working to keep the shape of the eyelet perfect as the stiletto

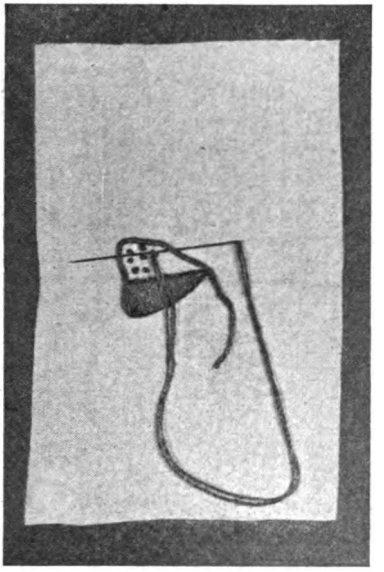

Fig. 259.—Seeding.

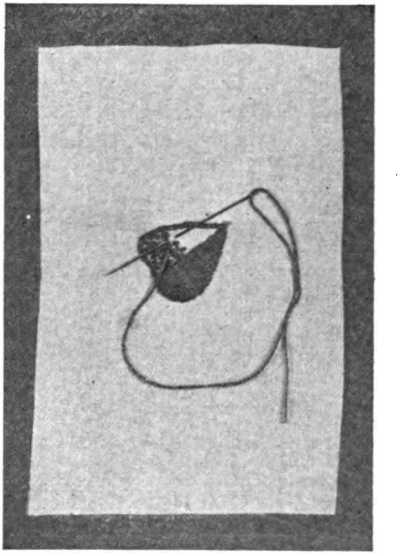

Fig. 260.—Matting.

cannot be used. It may be advisable to cut the cloth away from only one quarter at a time.

Bermuda Fagoting (Fig. 262), a form of open work used on sheer materials; it is very easily made without the drawing of threads, and therefore it can be made to follow a line in any direction or curve without reference to the thread of the material. For this a very large needle, No. 1 or 2, or a carpet needle, must be used, and very fine cotton, No. 150 or 200.

To work: Tie one end of the thread into the eye of the needle; the stitch proceeds toward the worker. Take a short stitch diagonally from right to left, tie the end of thread in this first stitch, put

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the needle into the first hole and take a stitch straight toward worker, bind with two more stitches in same holes, then put needle into second hole and bind it to the third with two stitches, put it again into the second hole and make a stitch straight toward the worker, bind second and fourth holes, then third and fourth holes, and make next straight stitch from third hole, repeat as before (Fig. 262).

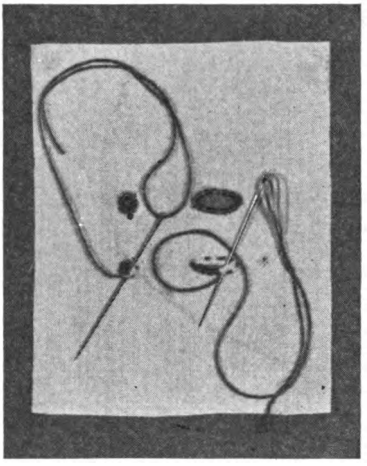

FIG. 261.—Eyelets.

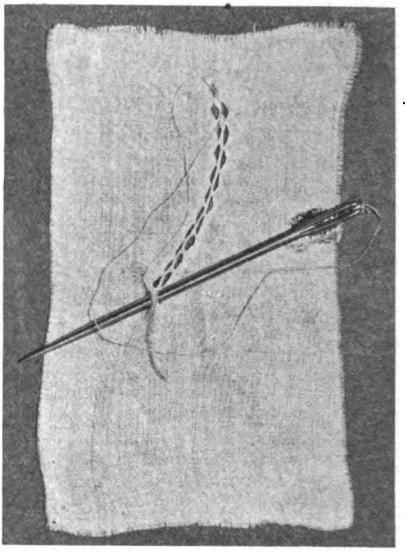

FIG. 262.—Bermuda fagotting.

Bermuda fagoting may be used to follow any design or to outline any unit, initial or monogram. Lace edging or insertion may be applied to material with Bermuda fagotting by basting the lace to place and working the stitch so that every other straight stitch is taken through the lace and material; afterwards the raw edge of the material behind the lace may be cut off close to the fagotting.

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CHAPTER XXIV

TO TEACHERS

THE author has been led, through the wish expressed by many students and teachers for a text-book embodying an exposition of technical problems, to place greater emphasis upon the explanation of constructive processes in pattern-making, clothing design, and garment construction, than upon a discussion of the selection of garments and materials, since these latter have been so fully treated in other texts. The subject has not, however, been omitted in this book. Because of the diversity of subjects and time allotment in school curricula, no definite plan of lessons has been suggested in the text. The effort has been made to present fundamental principles through which a variety of problems find explanation. For class-room use, the teacher must make a selection of problems that will best fit into the scheme of her course, and the time allotted to the subject.

Both the economic aim, in teaching textiles and clothing, to train our girls to become more intelligent consumers, and the artistic aim, to train them to appreciate and express that which is beautiful in clothing, should be constantly borne in mind by the teacher.

Textile study affords abundant opportunity to inculcate principles which will tend toward wiser expenditure of incomes, while in the appeal to artistic sense and feeling, lies the teacher's strongest asset in bringing her pupils to conform to rational modes of clothing their bodies. By well-directed study of color, line form and texture, she may lead them to avoid some of the evils of the modes of her day, whether it be lack of simplicity in the decoration of under or outer-garments, extremes in width or length of skirts, sheerness of attire, pinched in waists, high-heeled shoes, or what not.

Girls should first of all be led to appreciate the need for planning how the money earned for their support shall be spent. They should learn to know the necessary articles of clothing suitable for their individual wardrobes. Girls should be encouraged to make out clothing budgets, not only for themselves but for the other members of their families. Each teacher should adjust her teaching to meet the income situation of her class. Two-thirds of American families live on less than $750 a year, probably, and nine-tenths on less than

$1200 a year—as the income of the main wage earner. High school teaching should be rational from the point of view suggested by these facts; college classes, classes for business women, etc., require different emphasis as to costs—the clothing budget is typical for these groups.

The making of a clothing budget leads to the study of textiles, through which an interest in the industries that pertain to the manufacture of women's clothing may be established. The teacher must make careful selection of the subject matter for presentation, that no vital point be omitted in instruction.

The study of the selection of garments, ready-to-wear or materials to-be-made, leads at once to the study of design. The teacher should encourage all art tendencies and create an interest in constructive clothing design. Students should be encouraged in the free use of inexpensive materials as mediums for design. They should be allowed plenty of experimentation with dress-form and tissue paper at first, to give expression to such feeling for line and form as they may have; they should also be encouraged to visit art museums, if available, and to study prints and fashion plates, then criticize and reproduce in draping what is pleasing to their sense of harmony of line. For training in the use of color, and texture, fabrics should be put into their hands for experimentation.

Pattern-making and the use of both drafted and commercial patterns may be taught, the number of exercises being left to the judgment of the teacher. It is highly important that pattern making be approached and demonstrated in such way that pupils will soon learn to enjoy this form of constructive work. To teach it anatomically rather than mathematically, is to lay a good foundation for an appreciation of line and form. The constructive processes involved in garment making tend to increase the skill and speed of the worker, toward which both teacher and pupil must strive.

Use of Illustrative Material.—The teacher of textiles and clothing usually finds herself in a position in which she must practise the strictest economy of time in her class-room procedure. The lessons must be presented in the clearest possible manner; no time must be wasted in her demonstrations; whether her class be small or large, she must strive to reach each pupil by her demonstration, and withal sustain the interest of the group; the lessons must have injected into them some element vitally related to other interests

and experiences of her pupils. Whether the subject is being presented to children, adults, prospective teachers or home-makers, there is abundant opportunity to use illustrative material as a means of simplifying instruction and saving time. The effectiveness of its use will depend wholly upon the sound judgment, resourcefulness, originality and ingenuity of the teacher. In the writer's experience, the abundant use of illustrative material has not only been found a time-saver, in that it quickened the students' perception of the constructive principles being taught, but most important of all, careful preparation of the material has clarified her own presentation of the lessons.

Illustrative material should be used in a large, non-stereotyped fashion, with frequent changes in type, adapting it to the principles to be taught. It can safely be placed in the hands of pupils themselves, either to review, letting several pupils work under class criticism, or to develop a new from an old problem, in application of familiar principles. Put into the hands of an entire class to follow a demonstration that is being given with the use of similar material in the teacher's hands, it is an excellent test of observation and attention to directions. For example—have class make different types of cuffs and collar bands in paper, illustrating interlinings, stitchings, etc., as the demonstration is given step by step; or, make a basted cambric model of a shirt-sleeve placket facing following the demonstration.

The materials need not necessarily entail a great deal of expense to the teacher. Much of what she will use may be supplied by the school, but for many problems, that which is her own, and which she can manipulate as she chooses, will prove most effective in its use. While the materials may oftentimes be of the crudest, and least expensive kind, in choosing them the artistic element should have consideration. The effect of color and texture, even in coarse wrapping or drawing papers, must not be underestimated, while the teacher may be primarily seeking to explain purely technical processes.

Suitable Equipment and Teaching Material.—The installed equipment of the class-room may be used for whatsoever illustrative principles or purposes the teacher may find it suitable. The blackboard may be used for rapid, crude illustrations, or more carefully prepared drawings, and for demonstrations of drafting. The

demonstration frame serves its purpose in showing the method of making stitches, but of far more value the writer holds the various types of canvas, and half or unbleached muslins, which may be used for demonstration cloths. These can be hung from the blackboard frame, using push-pins, or from a strip of cork board or cork linoleum, which has been fitted to the top of the blackboard. The advantage of these demonstration cloths is their flexibility, varying texture and color, which lend themselves to different modes of treatment, whereas the ordinary demonstration frame is an unsteady piece of furniture. A ten-cent child's hoop, covered with soft, coarse, creamy-white canvas, set into an embroidery frame holder and fastened to some stationary piece of equipment (the open drawer of a cabinet or back of a chair) makes an excellent frame upon which to illustrate embroidery or simple stitches. Coarse wools threaded in long coarse darning needles, of which a generous supply previously threaded should always be at hand, may be used in illustrating stitches. Choice of color in wools is somewhat limited. Reds, brilliant blues and deep orange show up better to those in the rear of the room. Where illustrations of seams are being made, the cloth should be of *double* thickness to preserve a uniformity of process that may not confuse the beginner who may come forward to examine the work of the teacher more closely. This is necessary, too, in illustrating basting and tailor tacking. It is advisable in the buttonhole lessons and is not more difficult to handle if prepared before the lesson, by basting each side of the line for the buttonhole before cutting (use cotton of the color of the canvas so it will not show).

To adopt simple appliances, available tools, and homely stuffs to be had oftentimes merely for the asking, serves equally, purposes of explanation and of economy. Wrapping paper, for instance, has proven a valuable aid in teaching. Heavy manila paper makes durable strips upon which to prepare illustrations of the method of making stitches. Colored crayon drawing done in a large way is most helpful. Each strip of the paper should contain but one illustration, and be so hung as to show the correct holding of the cloth. The name of the stitch may be omitted from the drawing until review, when both name and method of making should be supplied by pupils. Heavy, striped wrapping paper is equally serviceable in teaching bias cutting, and the joining of bias strips; also in

laying tucks and box plaits in shirtwaists, the making of placket facings in sleeves, and in making cuffs and collars. A coarse, brown wrapping paper serves well in demonstrating the adaptation of patterns. Cut in half-size models and placed on a sheet of cream-white or ecru-cambric, it conveys to the pupil in the rear of the class-room the point of demonstration, as clearly as to the one immediately in front of the teacher. Plaid tissue paper may be used to illustrate methods of patching garments, the worn spot indicated by colored crayola, or a spot burned away; to illustrate soiled spots, ink or oil may be poured upon it. This paper emphasizes the necessity for matching stripes and figures. It also answers well in the development of the model of a straight-plaited skirt in dressmaking classes. Cross-section paper for the pupils' use saves time in drafting lessons. It admits of a rapid sketch being made during the demonstration which, with its logical sequence of letters, serves good purpose in the later work. Heavy manila paper or cambric also makes substantial sheets upon which to work out the complete draft in two-colored crayola, to distinguish construction lines from the draft itself. These practical helps may be hung about the room while the pupils are drafting. A pattern in sheer material, organdie, lawn or crinoline, placed over the heavily-drawn construction lines of a draft, helps to show the relation of the construction lines to the completed pattern, while the dress-form, with lines drawn upon it to show the points for measures, is an invaluable help in showing the relation between the form and the drafted pattern.

Cardboard serves a number of purposes. Narrow strips may be cut and used to illustrate the method of marking hems and tucks. In teaching the sewing of buttons, a large disc of cream-white, ecru, or yellow cardboard with either two or four holes in the center, may be used to represent the button, which should be placed on a gray, dark blue or black cambric background. Red wool may be used for thread and a long thin nail for the pin to be slipped under the thread in forming the neck when sewing the "button" on. If the problem to be taught should be sewing on hooks and eyes, both the "hump" and the "swan bill" hook and eye can be made of quarter-inch Venetian iron or a heavy wire, or of white or black cardboard and these sewed upon heavy unbleached muslin when demonstrating the process. They may also be cut from white card-

board and used on a gray background. The similarity of the iron to the real material suggests its value. Cardboard serves other purposes. One-half-size patterns, called block patterns, of both skirts and waists, may be drafted and cut from cardboard and used in blackboard work to illustrate the development of various types of skirts from circular and gored models; also methods of changing patterns for various types of figures.

For all types of mounting charts, gray or gray-brown board is excellent. Textile studies may be made most interesting in this way, because the pupils engage in making the charts themselves. Right here is found splendid opportunity for correlation with other subjects of study, geography, history and arithmetic, while the textile and clothing side need in no wise suffer neglect. Cotton, silk, wool and linen industries may be thus intelligently studied, and spinning and weaving as well. Straw making and sewing and all felting processes may thus be illustrated, together with artificial flower making. Problems in planning wardrobes, introducing the consideration of income and expenditure, together with a comparative study of textiles can be made of vital interest. Exhibits of the necessary materials and tools employed in the construction of garments can be mounted in some such convenient way for class study. Cardboard mounts, in large and small size, of drafts, materials, findings, steps in constructive processes, etc., fill an important place in a teacher's equipment of devices. Some schools have found useful, a systematic collection of fabric samples, mounted on uniform cards, four by five inches or eight by ten inches in size with a blank form printed on the card in which is filled in a full description of the mounted sample, its trade name, fiber of which it is made, width, chief uses in clothing, substitute fabrics, etc. In mounting samples on cards, one edge can be glued to the card and the rest left free. All the principal fabrics listed in Chapter II might thus be secured for a school collection. Some teachers use sets of uniform samples of standard fabrics for identification.

Black blotters, with drawings in red and white chalk, make clear illustrations. Weaving lessons are simplified by the use of model looms made, some from cardboard, others from boxes or wood, from all of which the pupils may copy or originate. From a simply constructed loom made of a pasteboard box, the principles of weaving on the larger loom can be carried out, and the meaning of warp

and woof, warp beam, cloth beam, heddle, shuttle and batten may easily be taught.

Large needles should be used in teaching very heavy work, knitting or crocheting. A large piece of knitted material made of heavy wools, torn away roughly in the center, is an excellent model for teaching stocking darning; and with this may be used drawings to illustrate certain details such as the shape of the darn and the loops on the worn frayed edges to be cared for. Garments or pieces of materials should be at hand to illustrate the difference between woven and knitted materials. For instruction in dress darning, beside drawings and models of completed darns, a simple illustration may be made of heavy wools in two colors, on very coarse basket canvas, which, aside from the lack of a twilled surface, serves its purpose well.

Crinoline may be used as a model for the patching lesson. It creases easily, is coarse, admits of wool sewing, but does not give the problem of matching patterns in stripes or figures. Its best use in demonstration is for pattern draping as a preliminary step to a drafting lesson. For this purpose half-bleached or unbleached muslin or lawn may be used as well. To drape either skirt or waist in cambric, muslin or crinoline on dress form, and while doing so, to trace the development of pattern making from the draped to the drafted type, meantime drawing from the class the differences between the two methods of procedure, together with the relative advantages and disadvantages of the two types of pattern and the steps leading to the draft itself, makes drafting cease to be a "dry as dust" affair, because the student becomes a partner in the reasoning process.

Cambric or sateen, in cream-white or gray, makes a good background for demonstrating methods of placing patterns on materials, altering and adapting patterns, and placing seams of skirts and waists together for basting, because letters in black or white and patterns in contrasting colors, show more clearly to pupils in the rear of the room. Cambric and unbleached muslin are good mediums for trial patterns, for demonstrating, fitting and making alterations. The noiseless quality of cambric recommends it as a drafting surface; it is more durable than paper for the demonstration charts. Circular foundation skirts may be drafted directly upon it, and the

gores indicated as on paper, the pattern being used directly for fitting.

Students will advance rapidly if encouraged to demonstrate problems, subject to class criticism. It helps to sustain interest, promotes more careful observation and places some individual responsibility. We are surprised at the results obtained sometimes when a pupil draws in outline, upon the board, or cuts from paper, the model of a garment about to be made a class problem. A simple demonstration frame, an old picture frame covered with green baize, upon which an entire class is free to experiment at times, has given remarkable results through class criticism of the "stitch" formation, as demonstrated by its individual members.

Textile study calls for the use of a great deal of illustrative material in order to make it of vital interest to the pupil. Pictures, charts, educational exhibits furnished by textile manufacturers, samples of raw fiber, fabrics, a spinning wheel, hand-looms, lantern slides (if the school has a stereopticon), or a reflectoscope for reproducing on the screen illustrations from postcards and books, all have their value as means of illustration. Much of this equipment should be furnished by the school.

As illustrative equipment for teaching clothing design the teacher should have collections of prints and postcards, illustrating historic costume, books of illustrations as examples of color schemes, fashion plates, bits of fabrics, laces and ornaments and a variety of fabrics in long lengths to illustrate problems in drapery, with various mediums. The teacher on a moderate salary will of necessity have to make her collection gradually, but unless well-equipped with this material to create in her pupils a feeling for the beautiful in color and texture, she will find herself handicapped in her work. For problems in garment construction, the teacher should have a plentiful supply of models showing various seam finishes, methods of applying trimmings, etc.; these should show the various steps of procedure in each problem.

Instruction.—The teacher's instruction involves usually, a review of the lesson of the previous day, and a demonstration of the new problem for the day, this to be followed by a period of active work on the part of the pupils, during which the teacher is free to supervise the work as it progresses, giving individual help or criticism as it is needed. The demonstration period is not only intended

to show the proper method of carrying out the problem by constructive process, but in discussion, to emphasize such points as the use of the garments under consideration, materials suitable for their construction, their relative values and costs, designs for the garments suitable to the wearer, and adaptable to the material and such other points as the teacher may find need emphasis in her particular field.

Good class-room management necessitates the saving of time and confusion at all points of the procedure. In large, crowded classes, it is sometimes wise, to so arrange the problems so that they overlap, in order to have one-half of a large class at work on final finishings, while the other half may be using the tables for drafting, designing or cutting garments. Fitting periods can also be so carried on by the careful planning ahead of the day's work, that only two, four or six pupils will be at work in the fitting room at one time. Where dressmaking courses are very full, students may be permitted to work in teams of two upon one garment, one being head-worker, the other assistant on one problem, this order being reversed on the second. Whenever possible students of dressmaking should have opportunity provided for actual shop experience, for a longer or shorter time.

Note Books.—Students should keep note books in which directions and points taken down during demonstrations are entered. Students should be encouraged to use drawings and enter diagrams in their notes, carefully made and properly lettered and dimensioned. The outline form of taking notes should be encouraged. Large margins should be left for side-headings. Loose-leaf note books are desirable. In the note book may be mounted illustrations, and clippings. Teachers should check up students' written work.

Excursions should be organized to stores, to shops and to museums and art galleries, if they are available. Excursions, to secure good results require preparation in advance, proper direction in the field, and adequate review after the excursion is completed, by means of written accounts or discussions.

Exhibits have been used in sewing instruction to good advantage, in that they offer a special motive in work; they are especially helpful when parents can be brought to attend the exhibits, as it will give a real connection between school and home. Loan exhibits of dresses and dress accessories may sometimes be secured from large stores; the school should itself develop a teaching collection of exhibit

material, and teachers have sometimes organized an exchange of laces, fabrics and costume prints for teaching purposes.

Reference Library.—The teacher should herself have a professional library of one or more books, treating respectively of textiles, of fabrics, of the design and construction of clothing, and of the history of costume, the economic and social aspects of clothing, etc. She should encourage her school to develop a reference library for students' use. Other volumes in the series of which this book is one, will be found useful. Books can usually be secured from publishers on examination and this will help in judgment. Individual students besides owning the text-book, should be encouraged to secure additional material; in several States, the State College of Agriculture prints one or more bulletins on dress for free circulation and the office of Home Economics of the U. S. Department of Agriculture will shortly publish bulletins on textiles; in some cases students can develop their own permanent collection of fabric samples.

Score Cards.—Some teachers are finding score cards a useful method in instruction. A score card is a schedule listing the different aspects of some object or situation, with proportionate numbers assigned to each item on the list on a scale of 100, each item being given a larger or smaller number in accordance with its relative importance. The score card is then used in judging different examples of the particular object; each object in being scored is examined in regard to the characteristics listed and for each characteristic is given a more or less perfect score, according to its perfection in that particular regard; the total score is the sum of the scores for the various characteristics. The following are among score cards which have been suggested for judging clothing:

Sewing, Patching, Darning[1]

	Possible score	Points deficient	Actual score
Suitability of the article to the purpose	25	..	..
Beauty and quality of the design	10	..	..
Harmony of color and materials	15	..	..
Symmetry and accuracy in cutting	20	..	..
Perfection of stitches	15	..	..
Neatness of finish	15	..	..
TOTAL	100	..	..

[1] Missouri State Board of Agriculture Bulletin XI, No. 11, p. 21. For other suggestions, see U. S. Dept. of Agriculture, Office of Experiment Stations Bulletin 255.

Fancy Work, Embroidery[1]

	Possible score	Points deficient	Actual score
Perfection of stitches	20	..	..
Neatness of finish	15	..	..
Suitability of article to purpose	20	..	..
Beauty and quality of design	20	..	..
Harmony of color and materials	25	..	..
TOTAL	100	..	..

[1] Missouri State Board of Agriculture Bulletin XI, No. 11, p. 21. For other suggestions, see U. S. Dept. of Agriculture, Office of Experiment Stations Bulletin 255.

Such score cards may be used in the teacher's criticism of student work; or in a competition of student work in an exhibit; they have been found useful in class-room discussions as outlining the complete standard by which work is to be judged. Score cards such as those above might well be carried out in more detail, by listing subordinate points under each heading and dividing the total credits for each main heading among its subordinate points.

Tests.—An occasional impromptu test is not amiss, in clothing courses. A plan often tried with success has been the exchange and rating of completed garments (undergarments, middy blouses or shirtwaists) by members of the class. The garments were passed in to the teacher and put away for several lessons; they were then passed back to the class, care having been taken to cover the name label to avoid a sense of personal feeling, and so to arrange the distribution, that no pupil examined her own work. Criticisms were written on the work, pinned to the garments and these in turn given back to the teacher for examination.

A simple problem in the form of dictation, tests the ability of the pupils to follow given directions. It is also a good plan to have a class follow a simple new demonstration, working along with the teacher, as a means of testing ability to follow spoken direction.

Reports of observation trips, written and read to the class, are good tests of the ability to see and recall that which will help in the class-room problems. Simple new problems involving the application of familiar principles should occasionally be given classes to be worked out without the aid of the teacher; for instance,—if the principle of designing plaited skirts from gored patterns has been

taught, the class test might be to design a tucked or plaited waist from a plain shirtwaist pattern, applying the principles already carried out in the first problem.

Reviews.—A brief daily review of the lesson of the day before should be given, at least enough to fasten the chief principles taught and prepare the way for new work. A written description of the method of making a garment, together with an itemized list of materials, quantities and cost, may be handed in with each completed garment. Reviews conducted by members of a class, subject to the criticism of the remainder, are stimulating. A combination review and test may be given, by having pupils write a series of questions, such as a teacher might prepare for an examination on a completed problem.

Examinations.—Either written, oral or practical tests may be given at stated times throughout a course of instruction, or at the close of the term. The type of examination should vary to meet the need of the class. Each teacher must determine at which time the proverbial written test will bring the most to the group; when an oral test will bring to the attention of an entire class, through the recitation of an individual, the most important points brought out previously in demonstration and class-room practice; or when a practical test will best give evidence of the individual pupil's ability to put into practice, certain principles previously taught.

TO THE HOME WOMAN AND DRESSMAKER

The woman who maintains her home, does all or part of her family sewing, with or without the aid of a seamstress, should find much of interest to herself in her work, within this book. If her problem be concerned with the saving of income, useful helps are to be found in Chapter I, Income Spending; also in Chapter II, Facts for Consumers, which treats of the fabrics of which women's clothing is made. In Chapter III, Clothing Design, are presented some fundamental principles to guide in planning the garments to be made. Chapter IV states some theory about color and suggests exercises intended to advance one in the intelligent use of color. Chapter VIII shows methods of designing clothing by the use of flat patterns, or by draping directly on the form. Chapter IX treats of the purchase and use of the commercial pattern, which for

many, seems the necessary key to the situation. Chapters X and XI tell of the necessary tools and equipment for a sewing outfit, and how to make the fundamental stitches used in garment construction. In Chapters XII to XXI are to be found directions for making various under- and outer-garments, while Chapters XXII and XXIII treat of methods of decoration.

The home woman, should provide herself a place in which the sewing may be shut out from her view and thought, when engaged in other work, or recreation. This may be accomplished in one of several ways:

A Sewing Room.—Where most or all of the sewing is done within the home, a room, be it ever so small (if well lighted, and with chance for good ventilation), in which the cutting, basting, stitching and pressing may be done, the work dropped when necessary and the door closed upon the seeming disorder will prove not only a great saver of time, but strength and energy as well. A room with a north light is good because the light is steady and easy to the eye. We all love sunshine, however, and should take it into all the work we can, so much is to be said in favor of the sunny window. Where there is abundance of sunshine, it is well to have the window shade in two parts, so as to draw it from the bottom where it is desirable to have all light from above. A good artificial light should also be provided for use on short winter days. If a sewing room is not a possibility, then devise some means of putting the work out of sight when laid aside for other duties or leisure time. It may be an entire chiffonier or a corner of one's bed-room cupboard may serve the purpose.

As much sewing equipment for the room may be selected from that listed on p. 136 as the individual woman can afford to install. A few of the most necessary pieces of equipment are here noted.

Cutting Table.—This should be high enough to stand before and cut out without "breaking one's back," should be built to suit the individual height. It can be either a heavy table such as is used for laundry purposes, or simply a loose top and trestle built by the carpenter who does the odds and ends of work for the home. It should have a smoothly planed, but unvarnished surface, so that tracing may be done at will, without fear of marring it.

Cupboard.—A good sized cupboard with built-in shelves and drawers for supplies, materials and work, and space to hang un-

finished garments, is the best arrangement one can have, but should this be lacking, an inexpensive chiffonier may take the place of the drawers, while a shelf fastened to the wall, and beneath which, protected by an attractive curtain, the unfinished garments may be hung, will make a good substitute for the cupboard. Dress covers of cambric or percale, or large squares of cheese cloth, should be used to cover the garments to protect them from dust. Where space is limited, the cutting table may have drawers built under it, set far enough under not to interfere with the movement of the feet and knees when working.

Patterns not in constant use, should be kept in drawers or boxes, neatly folded, with the name on the outside. Those in frequent use can be clipped or pinned to a tape which has been fastened to the wall for this purpose.

Dress Form.—This is indispensable when dressmaking is to be done. It is not necessary to buy expensive forms if one is careful to select a form having a small neck, and well-shaped through the bust, waist, and hips. Adjustable forms are to be had which can be changed for individual members of a family; or tight-fitted linings may be prepared for each one for whom dresses are to be made and separate waist forms padded to fit the linings, and stored until such time as they are needed, when they may be used alternatively upon the one standard; or if one cares to make a greater outlay, a pneumatic form, which can be adjusted to fit any lining, may be used.

Sewing Machine.—Buy the best machine the purse will permit and give it the best care, then it will repay what you have spent upon it.

Pressing Boards.—It is important to have several boards if considerable sewing is done. There should be a skirt board, a sleeve board, a seam board, and also a heavy tailor pressing board, and cushion if one is doing cloth work. A good supply of pressing cloths should also be at hand with pan for water.

Where the sewing room is remote from the kitchen, a small gas or oil stove may be used to heat the irons or boil water for steaming velvet. Electric irons are desirable, if electricity is used in the house.

All tools should be kept in orderly fashion where they may be easily found when needed. All irons, shears, pin-cushions or papers

of needles should be kept where they will not be exposed to damp air, else they will rust.

One good fashion book at least should be subscribed for or if one lives near a newsdealer, a choice of magazines might be made each month which would give one perhaps just the suggestion needed for some particular garment to be made.

If the home woman add to her equipment, orderliness of procedure, whether it be the handling of equipment, tools or materials, fearlessness in experimentation, and the studious use of all the sources of inspiration to be found in art-galleries, museums stores, books and prints, she should meet with a measure of success in proportion to the effort set forth.

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